DGG
v.137

DOMESTIC ENGINEERING

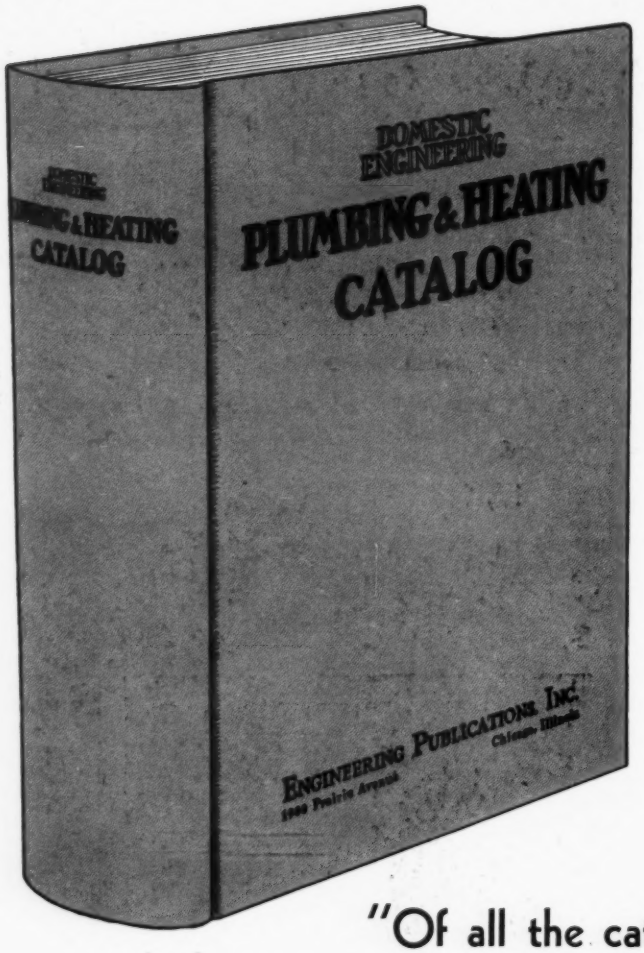
OCTOBER 17, 1931

Remodeling Sales Kit

Everything to help the dealer who desires to develop profitable jobs in the old home market. Inspection charts, guide for organizing selling effort, newspaper ads, produced by DOMESTIC ENGINEERING for the use of its readers

. . . See Page 45

See also
AUTOMATIC HEAT
. . . Page 63



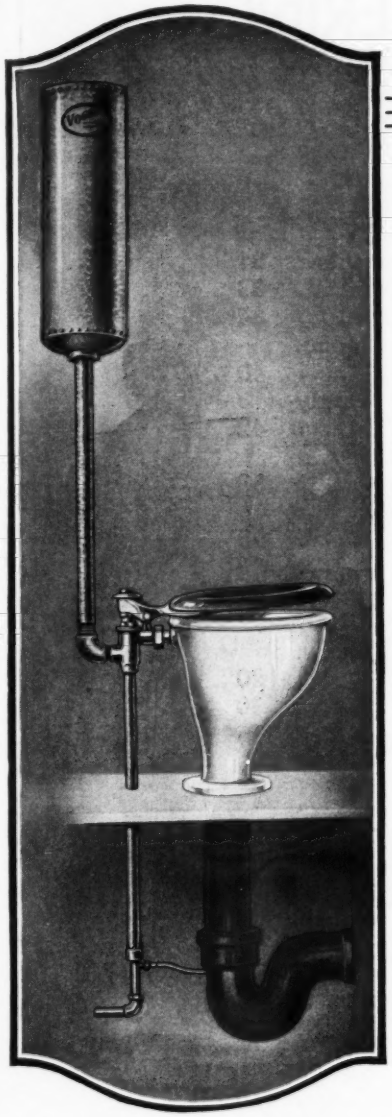
"I Have Cleaned Out My Catalog File"

says Mr. Miller

"Of all the catalogs I have on file, I will frankly state that the all-in-one catalog is simplified and perfect. In fact, I have cleaned out my catalog file and it gives me much more space."

Henry F. Miller of Crawfordsville, Ind., writes thus of his experience with The Plumbing and Heating Catalog.

DOMESTIC ENGINEERING
PLUMBING & HEATING CATALOG
1900 Prairie Ave., Chicago, Ill.



NUMBER ONE VOGEL
FROST-PROOF CLOSET

Simple in operation. Sturdy in construction. Half a million in operation

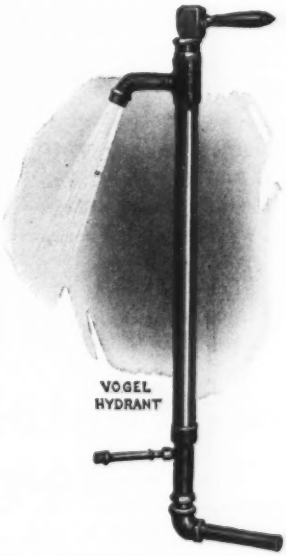
ASK YOUR CUSTOMERS . . . NOW . . . . . BEFORE COLD WEATHER, ABOUT THAT FROST-PROOF CLOSET OR HYDRANT . . . . .

MANY people don't realize that frost-proof closets and hydrants should be put in *before* cold weather—Don't let them wait until the ground freezes.

Make some personal calls—send them folders—call them on the 'phone—that's the way to get business now-a-days.

Don't wait for them to come to you—you go to them and you'll be agreeably surprised at the extra profits you'll make installing VOGEL Frost-Proof Closets and hydrants.

See inside back page for VOGEL advertisement on No. 10 and 10-A Closet Combinations



VOGEL FROST-PROOF
HYDRANT

Write for a supply of folders and blotters, imprinted with your name and address, to send out with your mail.

JOSEPH A. VOGEL COMPANY
Wilmington, Delaware St. Louis, Mo.

VOGEL PATENTED *Products*

DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

Established 1889

Vol. 137, No. 2 | October 17, 1931 | Whole No. 1954

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BRANCH OFFICES

NEW YORK—
Rooms 1706-1707, 110 East 42nd St.

PITTSBURGH—
Room 604, Chamber of Commerce Bldg.

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Bullseye!

for the

Airco 9800 Welding Torch

Another Airco product hits the bullseye—the Style 9800 Welding Torch for general welding of light, medium and heavy metals.

Examine this torch. You will like the ribbed handle which affords positive gripping surface without harshness to the hand. You will not have to use a wrench to operate the mixing head nut.

Needle valve leakage annoyances are reduced to a minimum by a stainless steel ball seat. One piece copper tips of swaged design are available in either the bulbous or long flame characteristic.

These new features have been incorporated without sacrificing the principles of design that have established the reputation of Airco-Davis-Bournonville torches as efficient and economical tools wherever welding is done.

Any Airco District Office will be glad to show you this torch. Phone or write.

Price with 5 Tips and Wrench, $25

Air Reduction Sales Company

Lincoln Building
East 42nd St., New York

Airco Oxygen—Airco Acetylene—Airco-Davis-Bournonville Welding & Cutting Apparatus — Supplies — National Carbide

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Represented in Texas by Magnolia Airco Gas Products Co., Houston, Beaumont, El Paso, Ft. Worth and San Antonio.

MAIN LIBRARY

Between Ourselves

THE front cover calls attention to the Remodeling Sales Kit which appears on page 45 and we again want to remind you of this special feature to be found in this issue. Here the contractor-dealer will find everything that is needed to help develop the old home market.

Your Editor

THIS Sales Kit is the most complete thing of its kind that has ever been developed for dealers in the plumbing and heating field. We want to call your particular attention to the ten new newspaper remodeling advertisements—five on plumbing and five on heating—that are a part of the plan. They are the very latest in newspaper copy and will do much to bring remodeling business to the dealer using them. In addition, the Remodeling Sales Kit contains inspection charts and a guide for organizing selling effort.

THE AUTOMATIC HEAT section this time contains four feature articles dealing with the sale and installation of oil burners, stokers and gas-fired boilers. The season is here when owners are fixing up their heating plants and now is the time for the heating contractor to get on the job for repair and modernization work. The titles of the articles in the AUTOMATIC HEAT section this time are: "Oil Burner Performance Records Make for Accurate Estimates," "Selling Satisfaction With Gas Heat," "Automatic Heat for Modest Homes," and "How a Heating Contractor Sells Stokers."

THE owner said it can't be done; the plumbing contractor said it could. Proof that it was done is found in the article commencing on page 33 of this issue. The place was one of Chicago's suburbs, and the plumbing contractor in the case was John Kuenzli of the Hillcrest Plumbing Company. Mr. Kuenzli was figuring for the plumbing on a large residence. He was trying to show the owner with water-colored drawings made to scale just how the two bathrooms he proposed to install would look when finished. Because of Mr. Kuenzli's reputation he was given the contract, although the owner still seemed to doubt that anyone could make a bathroom look like the ones shown in the pictures. The article not only shows how color combinations can be worked out so as to harmonize, but also is an example of how sales resistance can be overcome.

The man who is so busy that he does not have time to read his trade paper is like the man who was so busy chopping wood that he did not have time to sharpen his axe.

"WE read all articles published in your magazine and expect in the future, the same as in the past, to derive untold benefit from the knowledge gained by reading these articles."—H. E. Longley Plumbing and Heating Co., Wilmington, N. C.

WHEN the job was first fired the water line immediately dropped out of sight, and because of that the trouble was diagnosed as due to a dirty boiler. After water was added, and the system operating a while, all the water returned, and much of it had to be drained off. In an interesting and useful article in this issue, Earl Brown tells what he found when "Hunting a Disappearing Water Line," under the above conditions.

IN THE past two years the air conditioning of small establishments by means of ice has been increasing. Many theaters with seating capacities of 2,500 and over have been equipped with air conditioning systems using ice. The railroads are using ice to pre-cool sleeping cars for night runs and also are using it in cooling systems permanently installed in many of their new cars. In an article in this issue, commencing on page 40, two systems are described and illustrated that are typical examples of air conditioning with ice in small establishments. One of the jobs is an assembly room for meetings of various kinds, and operated as part of the advertising program of an ice company; the other a residential job.

LETTERS reaching us from our readers and information gathered in contacts by our field representatives and correspondents indicate that the industry is tremendously interested in the situation pertaining to the sale of gas appliances and gas heating equipment. The new policy of the American Gas Association concerning the sale of these products is the immediate cause for this increased interest. "What is it going to mean to the contractor?" is the question that is being heard on every side. "Domestic Engineering" is studying each development as it occurs and will continue to keep its readers informed on this important subject. An article will appear in the next issue giving a vast amount of information on the subject. It is an article that every contractor in the industry should read.

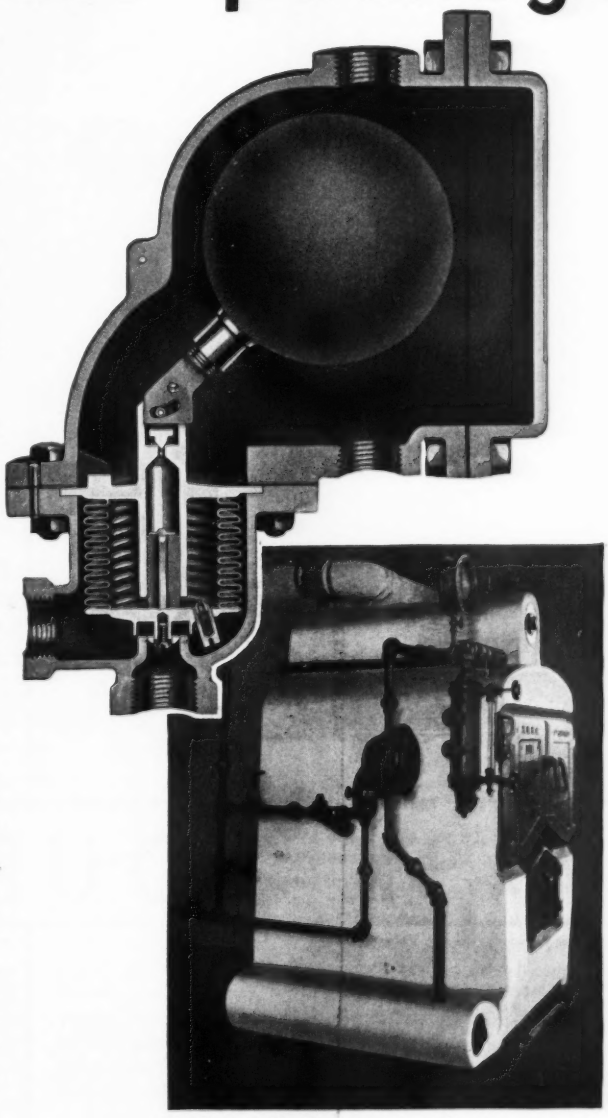
NOW—BIG PROTECTION in a smaller package

THE WEBSTER Boiler Protector introduced only a year ago has proven in service all the claims made for it. Positive protection against accidental low water in low pressure heating boilers—even under severe conditions—is now universally proven.

Now, in this new and smaller sized Webster Boiler Protector the same positive protection is provided at a considerably lower price, extending real boiler protection to even the smallest sizes of low pressure heating boilers.

Examine this new Webster Boiler Protector—you will find that it is the equal of its larger companion in every detail except size and weight. In design, workmanship, material it is the equal of the larger Protector introduced a year ago.

Our standing invitation to heating contractors and engineers to install Webster Boiler Protectors under severe service conditions holds equally good with this new and lower priced Webster Boiler Protector.



Webster Boiler Protector installed on low pressure, cast iron boiler. Applicable to all sizes of low pressure heating boilers where the maximum boiler pressure will not exceed 15 lbs. per sq. in.

Why Boiler Protection Is Essential

Boiler Protection is vitally important in modern heating installations. This is particularly true with gas and oil burning equipment, mechanical stoker, vacuum pumps—in fact automatic equipment of any kind. A *positive safeguard* is needed in case anything goes wrong with the automatic equipment during the absence of the operator.

Practically all low pressure heating boiler failures occur from loss of water and can be prevented by definitely protecting the boiler against accidental low water. The Webster Boiler Protector provides this needed protection. Most important of its qualifications is its extremely positive action. Repeated tests have indicated that the protector *simply cannot be stuck closed* because of the enormous power inherent in its unique design.

YOUR OPPORTUNITY FOR PROFIT IS DOUBLED

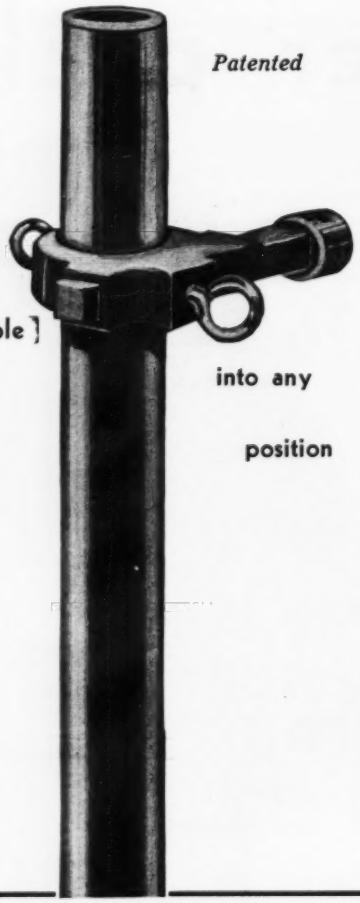
The opportunity to develop preferred business by selling and installing Webster Boiler Protectors on all sorts of existing installations,—vacuum, vapor, one-pipe; coal, oil and gas burning is doubled. Now every installation, regardless of size, can have a Webster Boiler Protector.

Be the first to recommend and install this new Webster Boiler Protector in your vicinity. Write or 'phone the nearest Webster Branch Office for additional information. Immediate deliveries. Order now and protect your jobs before the heating season gets too far under way.

WARREN WEBSTER & COMPANY, CAMDEN, NEW JERSEY

Pioneers of the Vacuum System of Steam Heating—*Branches in 60 principal U. S. Cities—Darling Bros., Ltd., Montreal, Canada* ▪ P 10

The New Webster Boiler Protector



STOKES HARD RUBBER ADJUSTABLE GUIDE ARM *and* OVERFLOW TUBE WITH REDUCING BUSHING *benefits the* PLUMBING INDUSTRY

The reason? Because it is the most convenient of any guide arm made, and its advantages make it EASY TO SELL.

It is adjustable to any desired position. It can be swung around the overflow pipe at any horizontal angle, and pushed in and out at the same time, making it easy to connect with the tank ball.

Not only that, it is made of Stokes HARD RUBBER and can neither rust nor corrode.

ASK YOUR JOBBER

HARD RUBBER IN EVERY CONCEIVABLE FORM

STOKES HARD RUBBER FLOATS

and other tank fittings are found in many high grade outfits. They are the last word in design and operation.

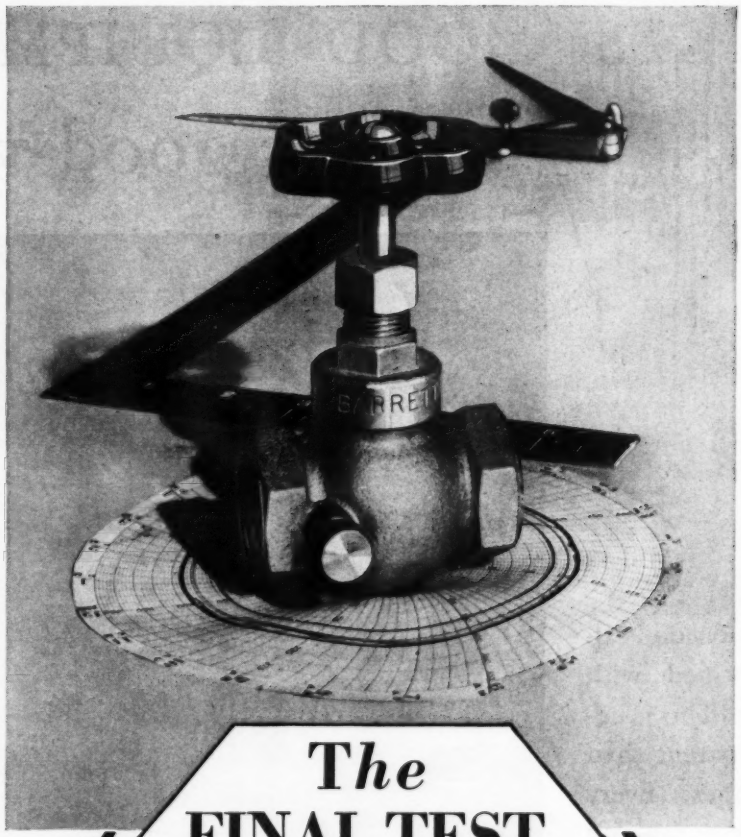
Stokes Floats can be safely guaranteed for the life of the tank.

Moulders Since 1897

Jos. Stokes RUBBER CO.

Trenton N.J.

Canadian Plant: Welland, Ontario



The FINAL TEST OF WORTH

YOU and thousands of other plumbing contractors whose reputations are established upon standards of craftsmanship which know no compromise, are the unseen governors of this enterprise.

It is what you conceive a job must be . . . your resolution never to allow your work to be marred or disfigured by a piece of pipe or rough brass goods that doesn't measure up . . . that sets the standard for Barrett Plumbers' Rough Brass Goods.

With you and with us a standard cannot be trifled with . . . it either controls quality and performance or it does not. Precision instruments and consecrated hours of research *continuously* maintain the standards for materials and craftsmanship in Barrett Plumbers' Rough Brass Goods in order to assure every piece meeting your requirements the way *you* want them met.

Designed to save the journeyman time on the job . . . triply inspected to avoid costly delays, every piece of Barrett Plumbers' Rough Brass Goods embodies the achievements of thirty-nine years' experience manufacturing to the standards of the plumbing contractor. Ask your jobber's salesman for a sample of the Barrett line and see how closely it measures to your standards. That is the final test of worth.

THE CLEVELAND BRASS MFG. COMPANY
4606-4700 Hamilton Ave. Cleveland, Ohio

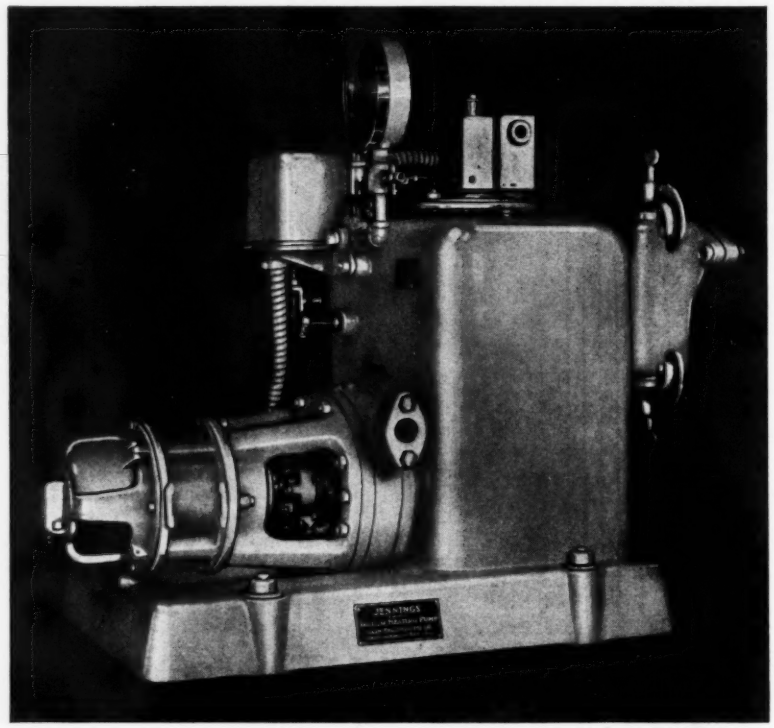
Compression Stops
Compression Stops & Wastes
Ground Key Line
Waterworks Brass Goods

BARRETT

PLUMBERS' *Rough* BRASS *Goods*

"THE STANDARD OF COMPARISON"

IT TAKES GOOD EQUIPMENT to build good-will . . .



A GOOD reputation is always identified with good equipment. This is nowhere more apparent than in your own business. Every valve, fixture or pump you install that bears the name of a leading manufacturer builds good-will for you.

The Unit Manifold Jennings Vacuum Heating Pump, identified by the Nash trade mark, is an example. Sturdily constructed, and specially designed to serve return line systems of 5000 sq. ft. of radiation and under, this pump can be relied upon to give large building efficiency to the heating systems in small buildings. Inspected and reinspected during manufacture . . . tested and checked by actual performance tests at the factory . . . it has earned the right to the Nash mark of quality.

For complete information on the Unit Manifold type of Jennings Vacuum Heating Pump, write for Bulletin 87.

Size U Jennings Vacuum Heating Pump with a capacity of 8 g.p.m. of water and 3 cu. ft. per min. of air. Recommended for return line vacuum steam heating systems of 5,000 sq. ft. equivalent direct radiation.

VACUUM PUMPS AND COMPRESSORS FOR AIR AND GAS ➤ ➤ RETURN LINE AND AIR LINE VACUUM STEAM HEATING PUMPS ➤ ➤ CONDENSATION PUMPS ➤ ➤ FLAT BOX PUMPS ➤ ➤ CENTRIFUGAL PUMPS ➤ ➤ SUCTION (SELF-PRIMING) CENTRIFUGAL PUMPS ➤ ➤ SUMP PUMPS ➤ ➤ SEWAGE PUMPS ➤ ➤ PNEUMATIC SEWAGE EJECTORS

NASH ENGINEERING COMPANY, 41 WILSON ROAD, SOUTH NORWALK, CONN.

Jennings Pumps

An UNBROKEN SOLDER RING *is conclusive, visual evidence of a leak-proof joint*

AFTER a Mueller patented joint is heated to the proper temperature with a blow torch, solder is introduced into the feed hole in the fitting. Almost immediately the never-failing phenomenon of capillary attraction distributes it quickly and evenly over the entire area between the pipe and the fitting. The first indication that this solder film has bonded these two surfaces is the appearance of a ring of tiny, dark green bubbles around the pipe at its junction with the fitting. This is the hot flux, which is being forced out of the space between the pipe and the fitting by the entrance of the solder. Wipe off these bubbles and a ring of bright solder can be seen beneath them.

This is a visual and never-failing proof that a tight and perfect joint has been made. Such a joint is stronger than the pipe itself. Expansion will not work it loose. Rust cannot corrode it. Vibration cannot make it leak.

If you are not thoroughly familiar with this patented joint, consult your jobber or write for our catalog.

Mueller STREAMLINE fittings are furnished in full range and in sizes of ¼ in. to 6 in. inclusive.

Mueller Brass Co.

PORT HURON, MICHIGAN

MUELLER BRASS CO. OF CANADA, LTD.
TORONTO, ONT.

Three Generations of Brass Making

A simple plan to sell more pottery » » »

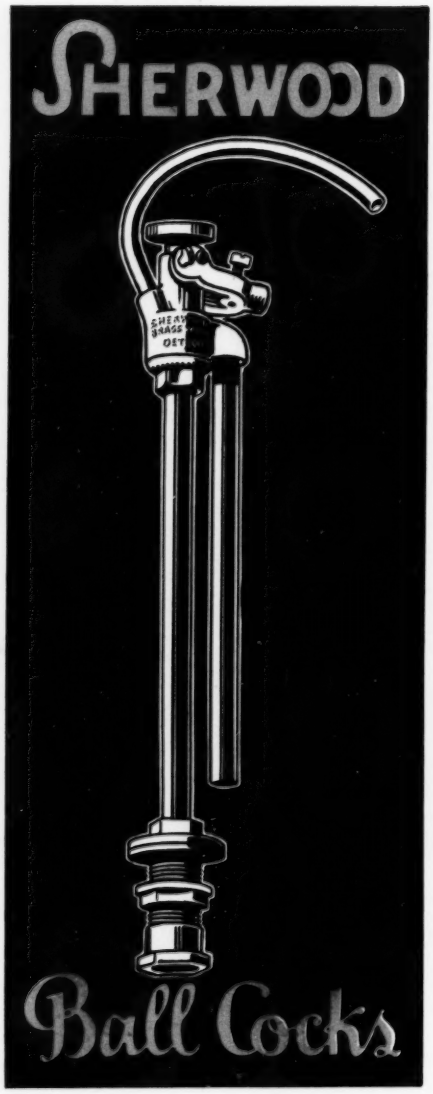
TAKE Sherwood's tip on selling remodeling. Here it is:

Order half a dozen or a dozen Sherwood Ball Cocks from your jobber. Start out with them and call on every home, apartment, store, gas station, public building, etc. in your community.

Ask people if closet tanks are noisy, leaky, hard on the water bills. You'll find hundreds that will say yes.

Then explain Sherwood's features: quiet in operation, closes without whistling or gurgling against any city water pressure, special Alexoid Red Band feature for communities where water conditions are bad and an attractive price.

You'll get plenty of Sherwood orders and you'll sell toilet seats, brass goods, pottery and heating equipment too.



Try this simple plan. Order your Sherwoods from your jobber today. Sell remodeling with Sherwoods.

SHERWOOD BRASS WORKS, Jefferson and Mt. Elliott Aves., **DETROIT,** **MICHIGAN**

REPRESENTATIVES

J. A. Riordan Co., (Inc.) 1600 E. 7th St., Los Angeles, 303 Colman Bldg., Seattle; E. S. Thompson, 2401 Chestnut St., Philadelphia; Fred G. Hoffman, 831 Edgewood Ave., Trenton, N. J.; Fred S. Wilson,

MEMBER OF
LEAD INDUSTRIES RELY ON LEAD ASSOCIATION

QUALITY LEAD PIPE
IS KNOWN BY THE
MARKING IT BEARS

NATIONAL LEAD CO.

When you see the familiar Dutch Boy trade-mark on lead pipe, you are sure you have a high-quality product, as well as pipe with proper wall thickness and correct weight per foot.

National Lead pipe is marked every few inches with the Dutch Boy trade-mark and the name of the National Lead Company so that you may get highest quality in the lead pipe you buy. With trade-marked lead pipe available, there's no excuse for buying lead pipe about which you have no knowledge. The Dutch Boy trade-mark identifies genuine National Lead pipe—it pays to look for it.

NATIONAL LEAD COMPANY

New York, Baltimore, Buffalo, Chicago, Cincinnati, Cleveland, St. Louis; National-Boston Lead Co., Boston; Georgia Lead Co., Atlanta; Gibson & Price Co., Cleveland; National Lead & Oil Co., of Penna., Pittsburgh; John T. Lewis & Bros. Co., Phila.

The Dutch Boy trade-mark on solder is also a guarantee of uniformity and dependability. Since every bar, every ingot is numbered to denote its composition, you can be sure of getting the same kind every time you buy. There's a grade of Dutch Boy Solder for every soldering purpose . . . including wiping.

LEAD PIPE

Caution!

BE SURE THE NIPPLES are WROUGHT IRON, too

NIPPLES are a small part of a piping system—but *important!* So important, in fact, that you jeopardize the investment in Byers Genuine Wrought Iron Pipe when you fail to use wrought iron nipples.

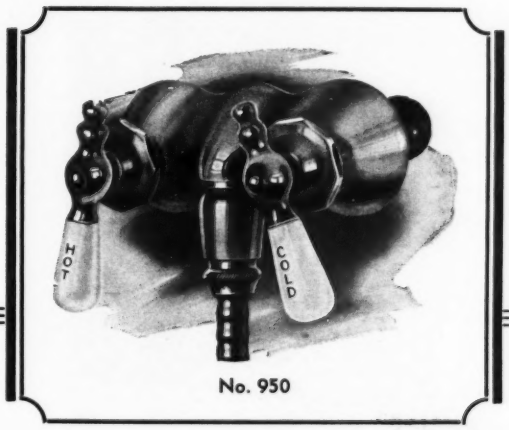
As every contractor knows, the weakest spot in a piping system, is where you find the least metal—at the nipples. Here, too, is where you find accelerated corrosion—because nipple joints act as "pockets" for steam condensates and other corrosives.

Byers Genuine Wrought Iron Nipples deliver protection against corrosion. Every Byers nipple is manufactured from new, tested and full weight genuine wrought iron pipe in accordance with the Commercial Standards of the Department of Commerce, Bureau of Standards.

Specify Byers Genuine Wrought Iron Nipples when you order from your jobber. Write for our new folder—giving sizes, weights, etc. of Byers nipples. A. M. BYERS COMPANY, PITTSBURGH, Pa., Established, 1864.

BYERS GENUINE WROUGHT IRON NIPPLES

AN INVESTMENT • NOT AN OUTLAY



No. 950

"THE DIFFERENCE BETWEEN AN OLD HOUSE AND A NEW ONE IS PLUMBING" » » » »

and these AMERICAN Bath Fixtures will help you do the job!

No. 530

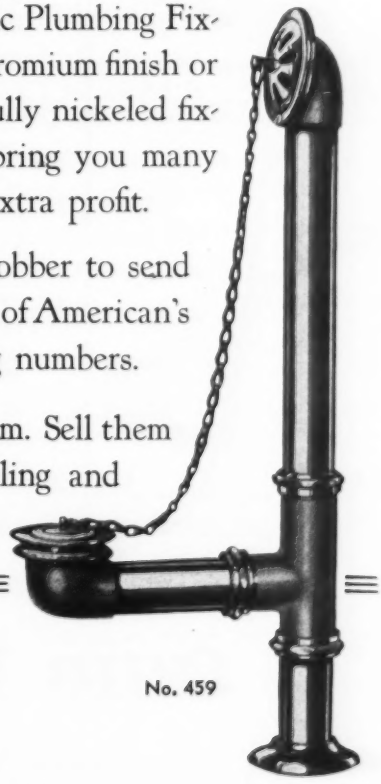
BATHROOM brass goods—and kitchen equipment, too—is in need of replacement in hundreds of thousands of American homes, apartments, hotels, office buildings and other structures right now.

A bright, sparkling, perfectly made American tub filler, and lavatory faucet on display in your show window and display room will sell on sight.

Take them with you on calls, too. Show them to customers who have asked for repair jobs. The new American Artistic Plumbing Fixtures in Chromium finish or the beautifully nickeled fixtures will bring you many dollars in extra profit.

Ask your jobber to send you several of American's outstanding numbers.

Display them. Sell them for remodeling and new work.


No. 459

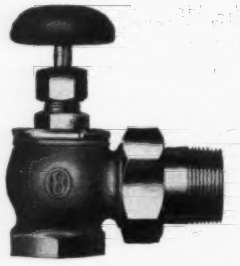
AMERICAN SANITARY MFG. COMPANY

ABINGDON ILLINOIS

"Profit-in-the-Make-up"
Packless Valves

OHIO Brass Packless Radiator valves are no exception to the rule; they are conceived, designed and manufactured with the same careful thought as to how the journeyman will install them. Will they go together quickly? and easily? Will they save his time compared with other valves? Will they be steam tight and satisfactory to the customer? Will they avoid later call-backs? and replacements? and this trouble and cost to the contractor and customer? The answer is an unqualified, "Yes!"

Among users, jobbers and salesmen, all Ohio Brass valves are exceptionally known for their quick and easy make-up features. Wise contractors make an extra profit because of these carefully thought-out and incorporated qualities. Ohio Brass Packless Radiator valves have these same "profit in-the-make-up" qualities which distinguish every Ohio Brass valve. That's why they are popular with contractors who know their costs accurately. Ask the Ohio Brass jobber-salesman to show you samples for your next job.



No. 30 Line
Steam, Angle and Corner Types

No. 35 Line, Packless
For steam, vapor and vacuum heating
Angle type with Union

No. 36 Line, Packless
For steam, vapor and vacuum heating
Angle type with union

No. 3 Line Valves
Globe and Angle
Low Pressure Composition Disc

The composition disc of the No. 3 line valves makes them equally serviceable for hot or cold water lines. These valves which are designed for low-pressure where conditions of service require a composition disc which may be renewed rather than a brass disc valve, are available in 4 sizes; ¼", ½", ¾" and 1".

* * * *

Ohio Brass Radiator Valves are regularly furnished heavily nickel plated with trimmings highly polished. "Comfortable Grip" handwheels are of black composition. Threaded right hand on both inlet and outlet.

1457V

OHIO BRASS COMPANY

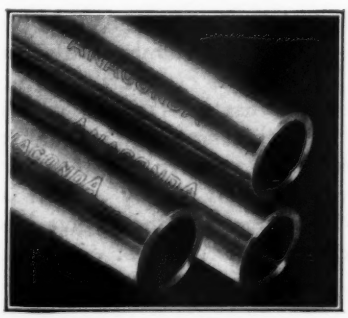
Mansfield, Ohio, U. S. A.

New York City · Philadelphia, Pa. · Chicago, Ill. · Wm. P. Horn Co: Los Angeles · San Francisco · Seattle

ANACONDA
from mine to consumer

"Now . . . they ask his advice"

"I've known Gilman for years. He was barely able to get by . . . until he specialized in nationally known products. *Then* he found success . . . and people began to respect his judgment."



When you handle Anaconda Brass Pipe, you enjoy the prestige that comes from using the product of the largest and most experienced manufacturer of Copper, Brass and Bronze. For Anaconda advertising has taught *your customers* that "Anaconda" means "dependable quality." Leading plumbing houses carry Anaconda 67 for normally corrosive water, Anaconda 85 Red-Brass for highly corrosive water, and Deoxidized Copper Water Tubes. The American Brass Company, Waterbury, Conn.

ANACONDA BRASS PIPE

THE GREATEST RESPONSIBILITY

Parents assume "the greatest responsibility" in the raising of a child to successful manhood or womanhood . . . . . .

The Wolverine Brass Works, too, has a great responsibility . . . the responsibility of success . . . . .

Success was brought to the Wolverine Brass Works by the universal recognition by Master Plumbers of the superior quality of "WB" Dependable Products . . . This has obligated the Wolverine Brass Works and all its workmen to maintain constantly the same high standards . . . . and to strive constantly to give the Master Plumber more and more value for his money . . . It is a great responsibility . . . and one that the Wolverine Brass Works gladly assume . . . . . .

WB

We Sell the Retail Plumbing Trade

WOLVERINE BRASS WORKS
GRAND RAPIDS . . . . . MICHIGAN

WOLVERINE

There is one great market ready for you

cash in on it

TODAY the average home where comfort is given due regard has everything except soft water . . . and it needs it! So water softeners are the only plumbing units left for which a great market exists quite outside of new building and replacements. This is because water softeners have only been perfected in the past few years . . . when the building boom with its enormous demand for stock materials gave Master Plumbers neither time nor opportunity to push this specialty. Now that building has dropped off is the time to cash in on this market. Modern living has created the demand . . . Crane Co. has developed the product.

This new hand-operated Model H0-12 Warlo *Water Softener of 12,000 grain capacity for . . . . .* **$99.50**
f. o. b. Rockford

This new brine tank model BT-15 Warlo *Water Softener of 15,000 grain capacity for . . . .* **$129.50**
f. o. b. Rockford

CRANE-WARLO *water softeners of larger capacities range in price from $150.00 to $460.00.*

•

Manufactured by Ward-Love Pump Corp., Rockford, Illinois, makers of Industrial and Household Water Softeners, Automatic Water Systems, and Pumps.

Why homes need soft water

Soft water keeps hair lustrous and soft. Hard water makes it coarse and brittle.

Soft water keeps skins smooth. Hard water roughens them.

Soft water reduces fuel costs. Hard water limes tubes and pipes, increasing fuel consumption.

Soft water preserves clothes, washes them whiter, saves soap and powder. Hard water wastes laundry supplies, leaves clothes grey, and destroys fabrics.

Food is tender when cooked in soft water. Tough or gritty when cooked in hard water.

Why the Warlo *is the softener for modern homes*

Warlo softeners are made in hand-operated and brine-tank styles.

Lowest price consistent with quality. As low as $99.50 for hand-operated types, $129.50 for larger capacity brine-tank softeners.

Warlo softeners are the simplest in operation. Nothing to confuse, nothing to get out of order in their design.

There is no channeling, no packing in *Warlo* softeners. Even the least expensive types operate on the up-flow principle which has made costly industrial softeners famous.

No mineral waste, or loss of salt or water in regenerating these softeners.

Crane quality valves and fittings have been used throughout their construction.

Low installation costs, minimized maintenance costs are assured.

To help you in selling these softeners, Crane Co. has applied its Budget Plan to them. This means you get your money as soon as one has been installed . . . all of it; while your customers have the convenience of meeting their obligation in small monthly sums. Get full information on these softeners and on the Budget Plan by writing Crane Co.

Special Limited Introduction Offer

A special dealer's display discount of 10% on one each of the units ordered prior to November 1 is being offered. Take advantage of this by getting your order in immediately. Write for further details.

Valves CRANE *Fittings*

WATER SOFTENERS, WATER SYSTEMS, VALVES, AND FITTINGS

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVENUE, CHICAGO

NEW YORK OFFICES: 4730—29TH ST., LONG ISLAND CITY

Branches and Sales Offices in One Hundred and Ninety Cities

P R PIPE

(PAUL REVERE PIPE)

helped put over

Sunshine City

Street scene in Sunshine City. P R Pipe was installed in these homes, and is giving and will continue to give permanent, trouble-free service. Paul J. Jossier, Architect. C. J. O'Dowd & Co., Plumbing Contractor.

Sunshine City, at Woodridge, N. J., was an outstanding home development success of 1930 in the New York metropolitan area. It consists of well-designed, sturdily built, popular priced homes.

Only high grade materials were used by Charles H. Reis, Inc., owners and developers, in the construction of these homes. They knew their success depended on giving home owners full value for every dollar.

For the plumbing, they selected P R Pipe. Their experience had proved to them that P R Pipe means plumbing systems that are permanent, rust-proof, free from repairs, replacement, annoyance and expense.

P R Pipe is 99.9% pure copper, completely deoxidized, and having a gun-barrel inside finish free from flaws and imperfections. It will resist accidental freezing. It has the effective wall thickness of S.P.S. (standard pipe size) pipe after threading. It is equally suitable for hot or cold water lines, as well as oil burner lines.

It comes in two tempers . . . No. 1 Soft for concealed work, where it can be bent to suit the needs of the installation . . . No. 2 Hard for straight runs and exposed work where appearance counts.

You as Plumbing Contractor can benefit by the growing demand for P R Pipe. It will pay you to find out all about it. Also about Revere Brass Pipe. When you use Revere Pipe, you have the right kind of pipe for every kind of job.

For further information, address Revere Copper and Brass Incorporated, 230 Park Avenue, New York City.

Revere Copper *and* Brass

INCORPORATED

P R PIPE

Baltimore *Division, Baltimore, Md.* Michigan *Division, Detroit, Mich.* Higgins *Division, Detroit, Mich.*
Dallas *Division, Chicago, Ill.* Taunton New-Bedford *Division, Taunton, Mass.* Rome *Division, Rome, N. Y*

EXECUTIVE OFFICES: NEW YORK CITY
GENERAL OFFICES: ROME, N. Y.

Clinch fall replacement jobs with the FUEL ECONOMY story of "BALANCED Fire Travel" . . .

To close jobs at a profit in these days, you need something more than price in your bids

SEND the story of Weil-McLain long, *balanced* back-and-forth fire travel along with your bids. Here is why: When you show a prospect *economy* features today, he is interested—no matter who he is. The story of Weil-McLain balanced back-and-forth fire travel is a story of *year-after-year fuel economy.* Your prospect can see and understand that. This feature eliminates heat waste up the chimney, because fire travel is not only back and forth over the heating surfaces—but is *balanced* as well.

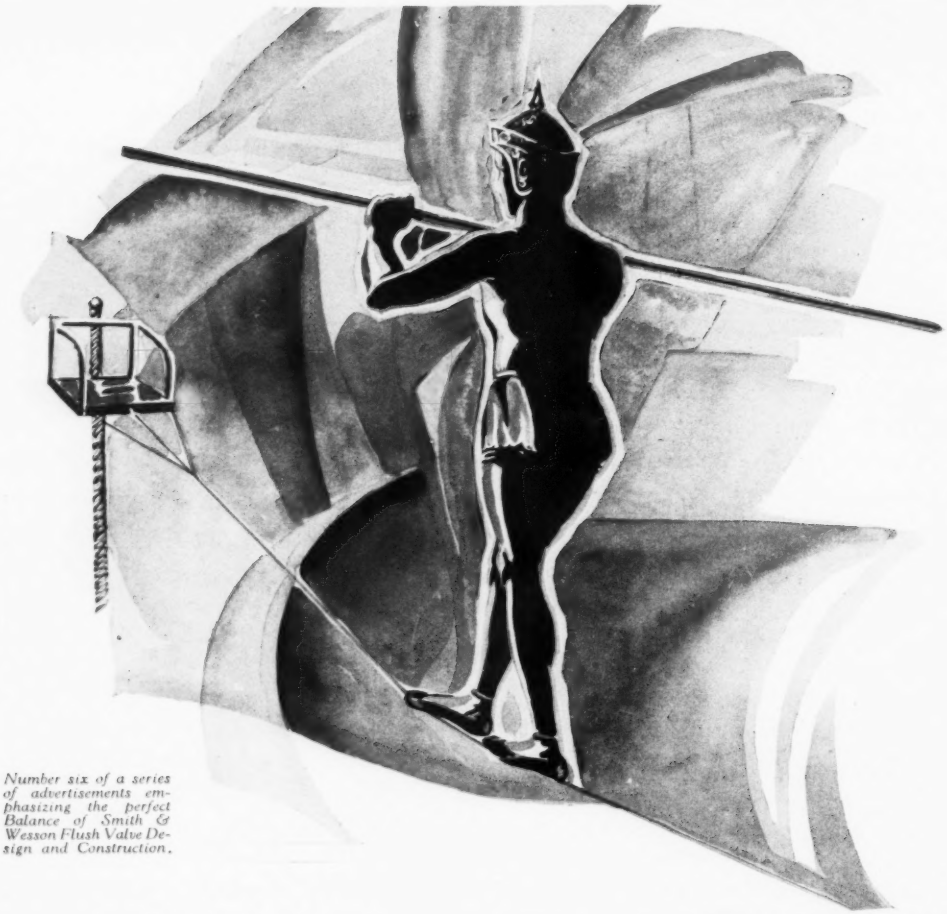
Hot gases *travel farthest* from A to B where draft pull is strongest — balancing draft so that pull is actually the same from C to D and from E to F.

And when you show him that Weil-McLain Boilers mean more heat at *less fuel cost*—year after year—you are giving him *something more than price to think about* in making his choice!

Similar fuel-saving principles are included in the complete line of Weil-McLain Boilers—Round, Square, Jacketed, Self-Feed and Smokeless; also Cameo Radiators.

WEIL-McLAIN COMPANY
General Offices: Chicago. Boiler Plant and Offices: Michigan City, Indiana. Radiator Plant and Offices: Erie, Pennsylvania
Canadian Representatives: James Robertson Co., Ltd., Montreal, St. John, Toronto and Winnipeg

Weil-McLain
SCIENTIFIC COMBUSTION
BOILERS
Fight Fuel Waste and Deliver More Heat



Number six of a series of advertisements emphasizing the perfect Balance of Smith & Wesson Flush Valve Design and Construction.

BALANCE

Skill is required to effect perfect balance. The principle is the same whether tight rope walkers or flush valves are concerned.

Years of development of skill in manufacturing precision products have given to Smith & Wesson the necessary knowledge to make a balanced flush valve.

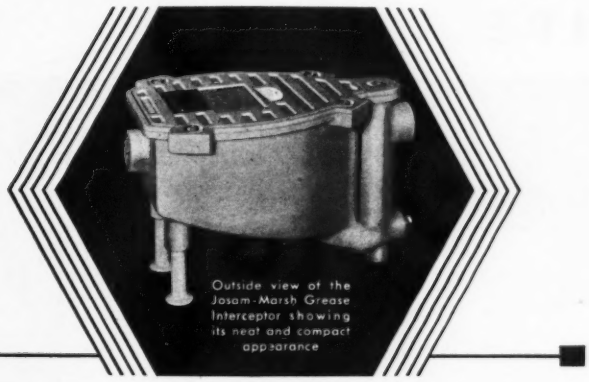
Records of The Smith & Wesson Flush Valve have proven conclusively their worth.

They give a degree of efficiency, economy, dependability and service to flush valve installations, hardly thought possible to obtain.

Your jobber can be depended upon to fill your needs. Ask for Smith & Wesson Flush Valves by name.

SMITH & WESSON
FLUSH VALVE DIVISION
SPRINGFIELD MASS.

FLUSH VALVES SMITH AND WESSON



Outside view of the Josam-Marsh Grease Interceptor showing its neat and compact appearance

But GREASE INTERCEPTION JOBS *are no longer difficult to sell . .*

GREASE
OUTLET
The Josam-Marsh Grease Interceptor in Action
Josam Marsh
GREASE INTERCEPTOR
(a) Inlet (b) V-Baffle (c) Flat Baffle (d) Converging Bottom Ribs (e) Converging Side Wall Ribs (f) Outlet (g) Channel to Outlet (h) Outlet Pipe Connection (i) Vent Connection and Cleanout (j) Seal Wall Separating Outlet and Body of Interceptor
INLET
OUTLET
Inside view of the Josam-Marsh Grease Interceptor with the Component parts identified

THAT goes for every town or city. The very people for whom you have done work should be your likeliest prospects . . . A new tested and proved device, the Josam-Marsh Grease Interceptor, opens up new jobs that can be easily sold.

Plumbing contractors in a western city have made over sixty installations; in another city of four hundred thousand, over a hundred installations. Grease interception jobs aren't big, and they are profitable when properly handled.

Adequate grease interception is a *definite* thing to sell, even where other methods are being used. It's the method by which the Josam-Marsh Grease Interceptor does the work that now makes these jobs easier to sell. Its performance is based on these four points:

No water jacket is used to solidify the grease.

Regardless of waste water temperature, Josam-Marsh Grease Interceptors, when properly installed, remove ninety-eight per cent of the grease.

Josam-Marsh Grease Interceptors have no moving parts—nothing to wear out. They are easily installed.

Retains only clean, salable grease. Evacuates all solids.

There are prospects for Josam-Marsh Grease Interceptor installations among hotels, restaurants, laundries, creameries, garages, gasoline stations and many industrial establishments . . . Josam-Marsh Grease Interceptors are made in sizes to meet any grease interception requirement, from an apartment house sink to the largest hotel kitchen unit. Architects and engineers specify them. Plumbing inspectors approve them.

The Josam representative in your territory is eager to help you sell grease interception jobs. Write for details of our proposition and special portfolio, and also Catalog "G" and New Products Supplement.

JOSAM MANUFACTURING CO.

4904 Euclid Building . . Cleveland, Ohio

FACTORY: MICHIGAN CITY, INDIANA BRANCHES IN ALL PRINCIPAL CITIES

Josam TRADE MARK REG. PRODUCTS

STANDARD OF AMERICA

Manufactured and sold in Canada by Empire Brass Mfg. Co., Ltd., London, Ont. Branches throughout the Dominion.

JOSAM PRODUCTS ARE SOLD BY ALL PLUMBING AND HEATING SUPPLY WHOLESALERS.

We will welcome inquiries regarding the use and installation of the Josam Products listed below: Josam Drains for Floors, Roofs, Showers, Urinals, Garages and Hospitals; New Josam Non-Clog Triple Drainage Drains; Josam Swimming Pool Equipment; Josam-Marsh Grease, Plaster, Dental and Surgical, Sediment and Hair Interceptors; Josam-Marsh Shock Absorbers for pipe lines; Josam Open Seat Swing Check Valves; Josam Open Seat Back Water Sewer Valves; Josam Adjustable Closet Outlet Connections and Bends, Water and Gas-Tight.

THERE ARE NO SUBSTITUTES FOR JOSAM PRODUCTS

FOR PIPE. . . .

use Youngstown for

PERMANENCE

The Union Industrial Building, Flint, Michigan, in which Youngstown pipe and Youngstown Buckeye Conduit are used exclusively to insure permanence in plumbing, heating and electrical systems.

Architects and Engineers—
SMITH, HINCHMAN & GRYLLS, DETROIT

General Contractors—
REALTY CONSTRUCTION CO. DETROIT

Plumbing, Heating and Ventilating Contractors—
FREYN BROTHERS DETROIT

Electrical Contractor—
ALLEN ELECTRIC CO.

■

District Sales Offices:

ATLANTA · · · Healey Building
BOSTON · · · · · · · Chamber of Commerce Building
BUFFALO · Liberty Bank Bldg.
CHICAGO · · Conway Building
CINCINNATI · · · Union Trust Building
CLEVELAND · Terminal Tower Building
DALLAS · · · Magnolia Building
DENVER · Continental Oil Bldg.
DETROIT · · · · Fisher Building
KANSAS CITY, MO. · · Commerce Building
LOS ANGELES · 3000 Santa Fe Avenue
MEMPHIS · · · 42 Keel Avenue
MINNEAPOLIS · Andrus Bldg.
NEW ORLEANS · · · Hibernia Building
NEW YORK · 30 Church Street Hudson Terminal Building
PHILADELPHIA · · · Franklin Trust Building
PITTSBURGH · · · Oliver Bldg.
SAN FRANCISCO · · · 55 New Montgomery Street
SEATTLE · · · Central Building
ST. LOUIS · · Louderman Bldg.
YOUNGSTOWN · Stambaugh Building

LONDON REPRESENTATIVE:
The Youngstown Steel Products Company, Dashwood House, Old Broad Street, London, E. C. Eng.

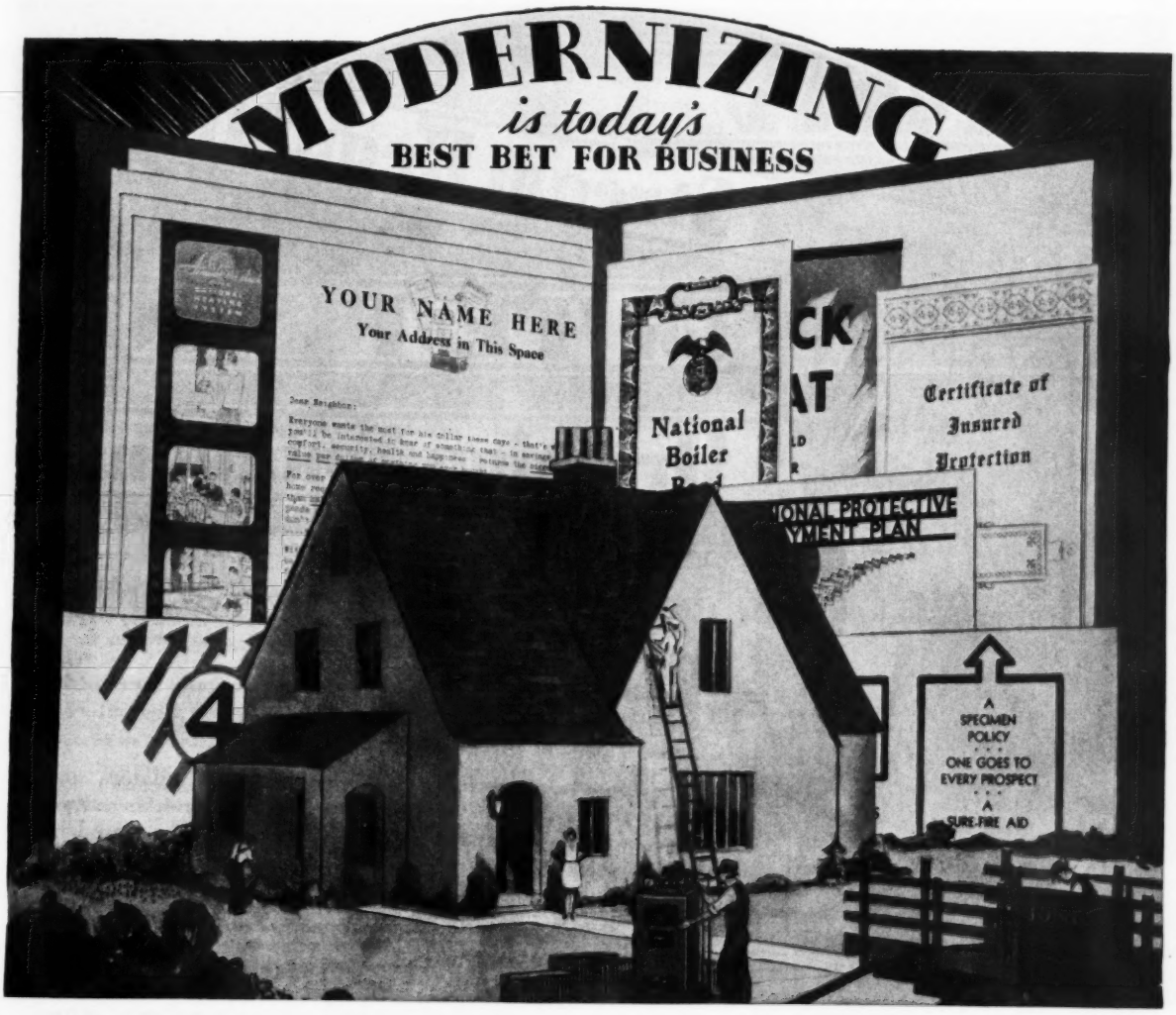
■

GALVANIZED SHEETS PROTECT SAVE WITH STEEL

YOUNGSTOWN Steel Pipe used in plumbing, heating, sprinkler or refrigeration systems, affords the soundest assurance of a permanent installation . . . and at the same time means easier installation for the contractor. // Leading contractors have proved that Youngstown's uniformity, ease of bending, cutting, threading and welding on the job actually effect installation economies by time saved on the job. Try it on your next job and convince yourself of its installation ease. // Youngstown products are distributed by leading jobbers everywhere. Ask your jobber . . . or write direct to us.

THE YOUNGSTOWN SHEET & TUBE CO.
One of the oldest manufacturers of copper-steel under the well-known and established trade name "Copperoid"
General Offices: Youngstown, Ohio

YOUNGSTOWN



NATIONAL'S 4 SUPER SALESMEN HELP SCOUT IT OUT FOR YOU

Home-owners who couldn't scrape up thousands to build can find a few hundreds to modernize . . . especially when they can pay on time, under National's Protective Payment Plan. Modernizing is today's best bet for business.

Getting the business is merely a matter of working the prospects . . . and National's new plan will help you do it. You furnish a mailing list . . . National sends to each name a series of four snappy, attractive illustrated letters, imprinted with your name, signed with your signature, telling of your service. With the letters go proved business-getting literature.

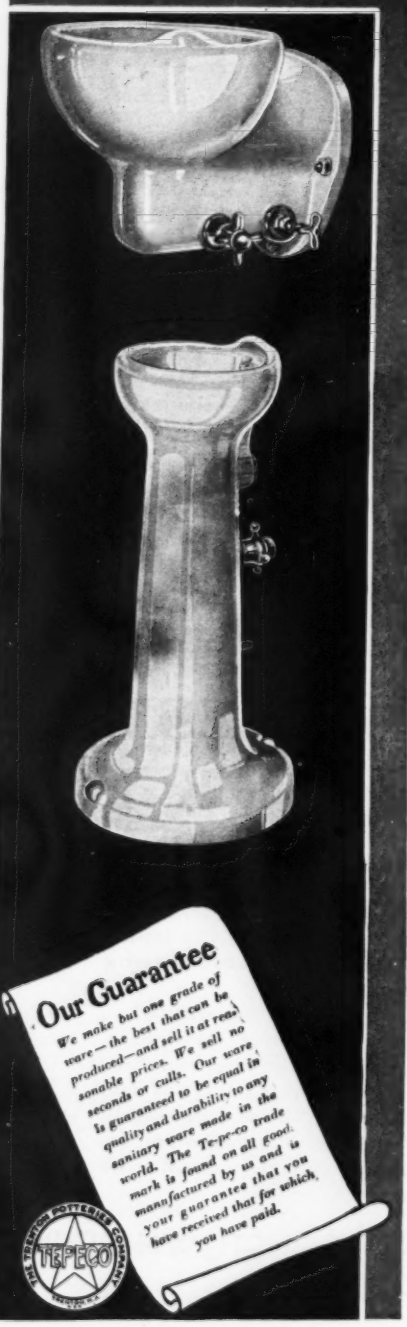
National furnishes the material . . . does the imprinting, the signing, the inserting, sealing, stamping, and mailing. All you pay is the postage. Let us send you—Free—a portfolio showing National's "Four Super-Salesmen" Campaign and explaining the proposition in full. May we hear from you—right away?

NATIONAL RADIATOR CORPORATION, JOHNSTOWN, PENNA.

Please send me the Portfolio

Name _____ *Address* _____

NOW Automatic Stream Regulators for TE-PE-CO Drinking Fountains


Our Guarantee
We make but one grade of ware—the best that can be produced—and sell it at reasonable prices. We sell no seconds or culls. Our ware is guaranteed to be equal in quality and durability to any sanitary ware made in the world. The Te-pe-co trade mark is found on all good manufactured by us and is your guarantee that you have received that for which you have paid.
TEPECO

THE beauty and practicability of design—the superlative quality and long, trouble-free service—of Te-Pe-Co Drinking Fountains is a matter of general knowledge.

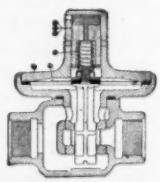
But—it may be news to you that these nationally famous fixtures are now equipped with Automatic Stream Regulators—and it's good news!

Now those who prefer Automatic Stream Regulators may enjoy this feature in combination with all the other advantages which products of The Trenton Potteries Company have always offered.

SIX POINTS of Stream Regulator Superiority

1. **Assures a constant height of drinking stream regardless of fluctuation in pressure.**
2. **No waste of water because balance valve delivers every drop of water entering regulator to the bubbler without discharging into waste line to maintain even height of stream.**
3. **Eliminates exposed metal from basin by locating regulator between bubbler and control valve.**

4. **Durable construction so designed that bronze spring and adjusting screw do not come in contact with water nor are there any small orifices to be affected by sediment.**
5. **Can be adjusted under pressure as regulating screw is sealed from water by diaphragm.**



6. **All operating parts easily removed whether exposed or concealed in fountain without disconnecting body of regulator.**

Te-Pe-Co literature mailed upon request.

THE TRENTON POTTERIES CO.
TRENTON, N. J., U. S. A.

National Showrooms
New York City—101 Park Ave.
Entrance on 41st St.

Philadelphia
Architects' Building
17th & Sansom Sts.

Branch Offices
Boston and Chicago

Export Office **115 Broad St., New York City**

NYE'S DIE- JEST

Published in the interest of Progressive Plumbers and Steamfitters and incidentally in the interest of the N.T.&M.W.

Vol. 1. No. 6 Price: One Order

To the Master Plumbers and Steamfitters of the U.S.A.:

Dear Friends:

As all the other bankers are handing out opinions on the business outlook (that's all they are handing out), I suppose I better do the same. I was a banker once,—one night only at a convention—and take it from me, they took it from me.

Well, there are some good signs, especially since the women started smoking. The sign boards say that women will walk a mile for a camel, and there are other women who will walk much farther than that for some jackass.

Another good sign is that the number of buyers in New York has increased 10%. The only difference is that now they want to know how much things are a thousand in dozen lots. If all these buyers were laid end to end they would reach from New York to Shanghai,—and they will be if they don't keep away from this night club hootch.

Another good sign is the number of bank failures is decreasing,—we're just about running out of banks. A number of banks have recently consolidated; that's what they call it when it's a couple of banks. It's different when it's a couple of automobiles.

The gold supply of the United States is $5,000,000,000.00, not counting the gold teeth. That means nearly $50.00 apiece, if you can get it. Write your congressman at once; it will only cost you two cents to ask and him nothing to say no.

All joking aside, business will probably get better long before it improves. Right now it's probably better than it is. Business will get better because we have learned better how to get business, and we are using better methods to do better the business we already have. Better send in an order for some Nye Pipe Tools. Then we will both feel better.

As ever, or nearly so,

Harry G. Nye

Otherwise known as The Nye Tool & Machine Works.

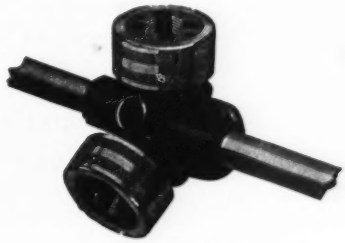
New Nye Die Has Threaded Throat

And speaking of better times, here's a new and better die—better because it has a threaded throat. There is no change in the lead or pitch, but the die is ground down slightly to get a good start on the pipe. When you start your thread, the die takes hold evenly, almost automatically; it stays on and starts without slipping, forcing or pushing. This means a quicker, better, easier thread—and a perfect thread from start to finish. So the next time you

order Nye Dies from your jobber, tell him you want the new one with the threaded throat.

New "TRIAD" 3-Way Stock Sure Is Handy

This is a practical, well-built tool, convenient to handle, that you may completely assemble or dissemble by hand. No screws or screwdriver necessary. Stocks have Nye solid round dies, held in place by two stationary pins built in the die heads to prevent them turning, and locked in by a threaded die head cap, easily removed by a few right hand turns. Dies may be reversed in die holder to thread close nipples, special bushings being provided with each stock for this purpose. Fully guaranteed by Nye.



Patent Pending

NET PRICES

	Net
Stock complete with 3/8", 1/2" and 3/4" Dies	$8.40
Stock complete with 1/2", 3/4" and 1" Dies	9.10
Extra Dies—3/8", 1/2" and 3/4", each	1.93
Extra Dies—1"	2.45

West of Rocky Mountains, 5% additional

THE NYE TOOL & MACHINE WORKS

Manufacturers of High Grade Pipe Tools

4120-30 Fullerton Ave. » » Chicago, Ill.

MODERN HEATING MAKES MODERN HOMES

These Posters Are Doing Their Job

Attractively printed on orange window strips, 25″ by 4½″, these window posters selling plumbing and heating remodeling are doing their job on thousands of automobiles, trucks, in show windows and stores and upon letterheads, envelopes, billheads and advertising matter.

You should be using them. Keep them looking fresh all the time. Have a supply of them on hand and change them as often as necessary. They'll put the help remodeling idea over for you.

Send postage stamps for any of the following amounts of these posters. The oftener you use them the more you increase your selling effort and the closer you get to more work and more profit. Order them today!

100 posters (50 plumbing and 50 heating)	$1.00
50 posters (25 plumbing and 25 heating)	.50
20 posters (10 plumbing and 10 heating)	.20
10 posters (5 plumbing and 5 heating)	.10

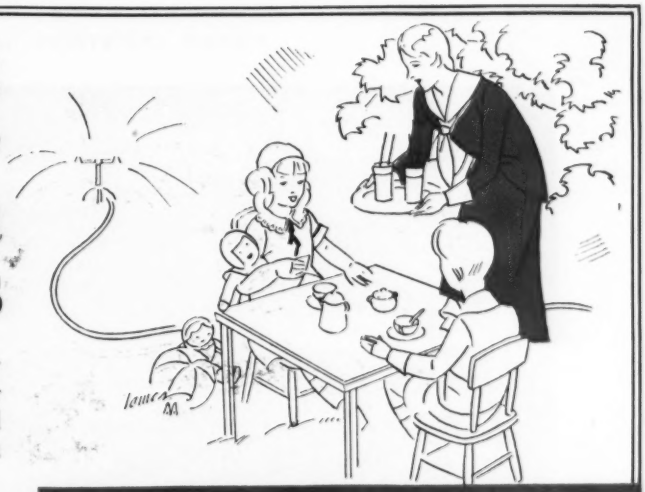
»

DOMESTIC ENGINEERING

1900 Prairie Avenue Chicago, Illinois

THE DIFFERENCE BETWEEN AN OLD HOUSE AND A NEW ONE IS PLUMBING!

She's PLAYMATE *as well as housewife and a* DEALER PROFITS



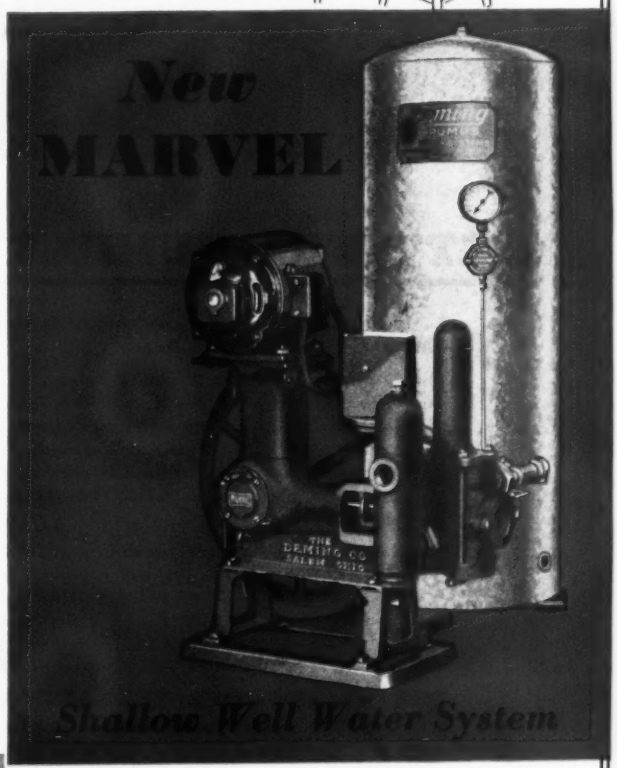
Youngsters don't just "grow up" as they did in days gone by, for today Mother spends more time directing their play and study, thanks to the labor and strength saving devices of our modern age.

Of course, no one mechanical helpmate in the home is sufficient to free her completely, but there is none more generally appreciated than a reliable Deming Water System which silently and dependably provides a constant flow of running water at a turn of the faucet.

And, since hundreds of women, even though aware of the convenience of an automatic water supply, do not realize just how economical and trouble-free a Deming Water System really is, there's a wonderful opportunity for you, as a Deming Dealer, to cash in by explaining the operation, the cost and the advantages of a Deming installation.

Homes, farms, cottages, office buildings, country clubs and industrial plants—all of these are markets where you can make money by selling the Deming line. That's why you should send the coupon right now to obtain complete information on this profit-making line.

THE DEMING CO., *Est. 1880,* Salem, O.



1 *Timken Roller Bearings or ball bearings on all rotating parts. See detailed illustration above.*

2 *Stainless steel piston rod.*

3 *Sectional construction.*

4 *Drop forged crankshaft.*

5 *Oil retainer prevents oil from leaking out along the shaft.*

6 *Splash shield protects oil reservoir from stuffing box water leakage.*

7 *V-type belt.*

8 *Automatic lubrication.*

9 *Automatic air control.*

Deming
WATER SYSTEMS

THE DEMING COMPANY, Salem, Ohio

I would like to have a copy of the new catalog illustrating and describing Deming Water Systems, as well as complete information regarding a Deming Dealership.

Signed _____

Company Name _____

Address _____

City _____ State _____

TOLEDO INDUSTRIAL SERIES No. 2

"Toledos" helped Bahnson Co. install these Bahnson Humidifiers in the Highland Mills, Griffin, Ga. Just one more "Toledo" Job.

IT'S THE HUMIDITY THAT MATTERS

Bahnson Humidifiers assure an absolutely uniform humid atmosphere in this Georgia mill, thus preventing thread breakage.

The Bahnson Company, Winston-Salem, N. C., manufacturers of Bahnson Humidifiers, when sending us the photograph of this installation, says that "We can hardly do without the No. 999. This machine has two distinct advantages; first, it always makes a straight, true, and satisfactory thread; and second, since a large part of our work consists of pipe upon ceilings, the energy ordinarily used by our men in pulling hand stocks can be saved for use in climbing ladders. A third advantage lies in the fact that the machine saves a great deal of time."

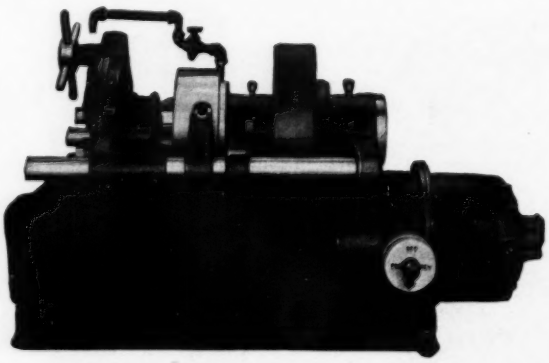
Here is just another contractor that vouches for "TOLEDO" efficiency.

THE FINEST, MOST EFFICIENT PIPE TOOL EQUIPMENT IS ALL MARKED—

"TOLEDO"

THE TOLEDO PIPE THREADING MACHINE CO., TOLEDO, OHIO

New York Office and Display Room - 72 Lafayette Street



"Toledo" No. 999. The ½-in. to 2-in. pipe machine that the Bahnson Co. "Can hardly do without on large installations."

Our Industry

DOMESTIC ENGINEERING

OCTOBER 17, 1931

Automatic heat is winning its fight for public attention. And attention is followed by approval and approval brings orders.

The soldier on the front line is the heating contractor and dealer. Behind him the generals of the different divisions—coal, gas and oil—are trying to bring him into their armies.

The gas and oil people have learned their lesson and are trying to win the attention of the experienced heating dealer.

A few years ago, they thought of their business as a selling job, good engineering in satisfactory installations being secondary. Today, most of them realize that customer satisfaction is what counts and that the heating dealer because of his engineering experience can build on satisfied customers where the rapid-fire salesman gets few repeat orders.

The coal men are newer in the automatic heat field and some of them are starting off on the road which nearly upset the oil burner industry and has held back the gas appliance business.

Fortunately this is a battle in which the public doesn't care which general wins. The consumer wants the advantages of automatic heat, and the industry which wins most of the heating dealers will be the one which gets most of the orders.

Did you see the interesting chart on "American Business Activity Since 1790," on page 118 of our October 3 issue. Many readers have asked us for copies of this 141-year chart for framing. If you want one, let us know promptly as the supply is limited. Enclose ten cents in stamps with your order.

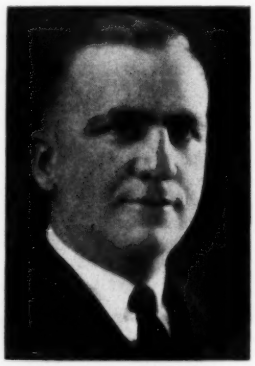
Plumbing and Heating Men Represented in New Plan of Leadership for Building Industry

P. W. Donoghue, who is general secretary of Construction League

MEETING on September 23 and 24, in Washington, D. C., representatives of nineteen groups in the building industry formed an alliance, to be known as the Construction League of the United States. The League is an outgrowth of the recognition of the need for general national leadership for the industry as a whole.

The objects of the League are to promote cohesion and co-operation within the industry. Leaders in all branches of building have been pointing to this need for leadership for several years. It has been said that a large measure of the chaos in the building field has been due to the lack of unity; and the statement issued following the meeting stressed the need for co-ordinating the various efforts being made by building groups to improve conditions, "each effort being carried on with very little, if any, support from other groups."

At the head of the provisional organization which has been set up is Robert D. Kohn of New York City, who is president of the American Institute of Architects. P. W. Donoghue, president of the National Association of Master Plumbers, has been selected as the new League's general secretary. In addition to Mr. Donoghue, the plumbing group was represented by R. J. Barrett, of Washington, D. C., a national director. The Heating & Piping Contractors National Association was represented by J. H. Zink of Baltimore, a national director, and by Joseph Fitts, secretary of the association.



Ray L. Spitzley, President national heating group, which was represented at meeting

Fig. 1—This building, located in Hinsdale, Illinois, contains the two bathrooms described in this article

The Owner Said

"It Can't Be Done!"

By JOHN LOCKE

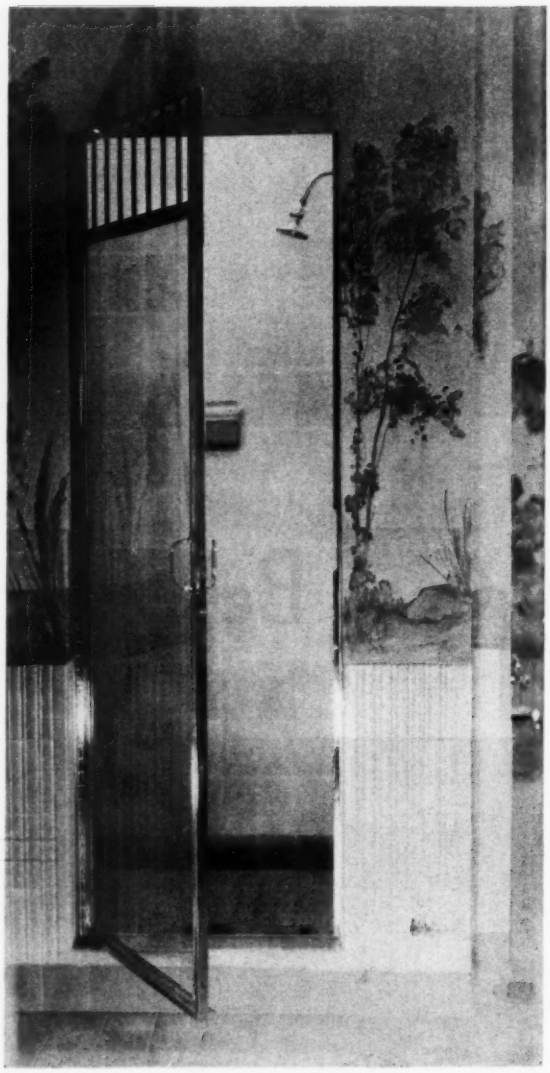
THE owner said it can't be done; the plumbing contractor said it could and this article stands as proof that it was done. In this case the plumbing contractor happened to be John Kuenzli of the Hillcrest Plumbing Company, located in a suburb of Chicago, and the discussion came about when Mr. Kuenzli attempted to show the owner with water-colored drawings made to scale just how the two bathrooms he proposed to install would look when completed.

The house in which the work was to be installed is shown in Fig. 1. The original drawings which started the discussion are shown in Figs. 4 and 5, the former being for the master's bath and the latter being illustrative of the proposed effect in the guest's bath.

These were developed especially for the house in question to fit the two spaces allotted. The plan views are shown in Figs. 8 and 9. Everything was worked out in true proportions and harmony. Of course the color in the drawings was lost in reproduction. The lay-out for the master's bath in Fig. 4 called for blue fixtures and

Fig. 2—One corner of the master's bathroom. It shows the work after it was installed. Compare this and the view in Fig. 3, with the drawings shown in Fig. 4

Fig. 3—This shower in the master's bathroom is in the corner diagonally opposite the corner shown in Fig. 2. Compare the finished effect of this photographic view and the view of Fig. 2 with the artist's drawings in Fig. 4. Within the limits of the owners preferences, it will be noticed that the proposed lay-out was reproduced very faithfully. The mural paintings are in oil and were worked out as a result of owner preference

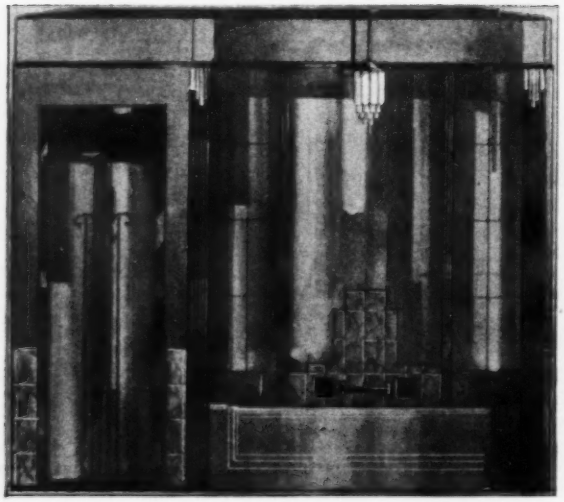


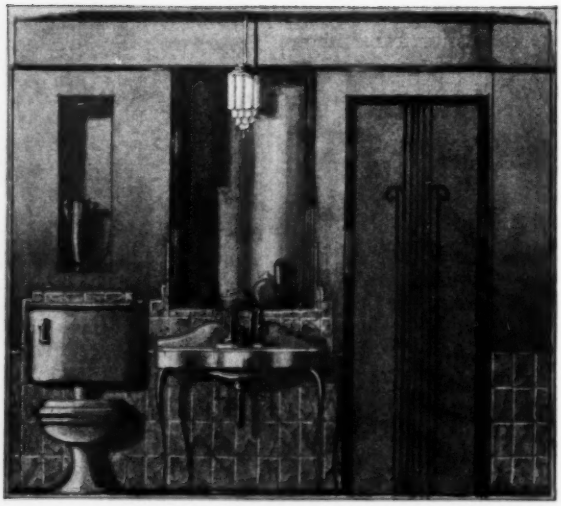
a gray wall tile. The color on the wall called for a pastel shade of green just above the tile, fading out gradually up to the halfway point between the top of the tile and the ceiling where it was to blend into a faint buff. The buff, in turn, was to become darker toward the ceiling. The door was to be a solid shade of pastel green of the same intensity as the darkest green on the wall just above the tile work.

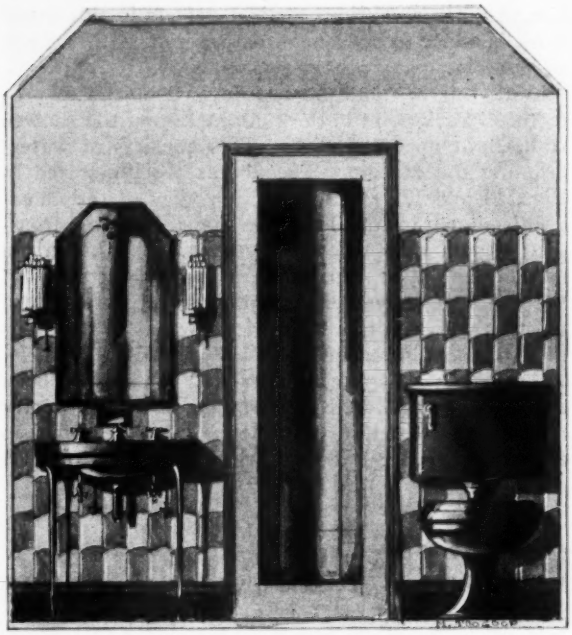
The drawing for the guest's bath, shown in Fig. 5, called for red fixtures, two shades of gray tile making a checker effect, green base and shower curtains and ivory doors, walls and ceilings.

Because of Mr. Kuenzli's reputation he was given the contract although there still seemed to be some doubt in the owner's mind that anyone could make a bathroom look like the one shown in colors. The work progressed and, as is customary, the owner developed ideas of his own during the course of installation and these took precedence over the original suggestions. The results in the master's bath are shown in Figs. 2, 3 and 10. One of the outstanding changes is in the

Fig. 4 — When the owner was shown the drawings below, and was told that this lay-out could be reproduced in complete detail with the same effect, he did not think it possible. The presentation, from the owner's point of view was too attractive and elaborate to be installed in actual materials







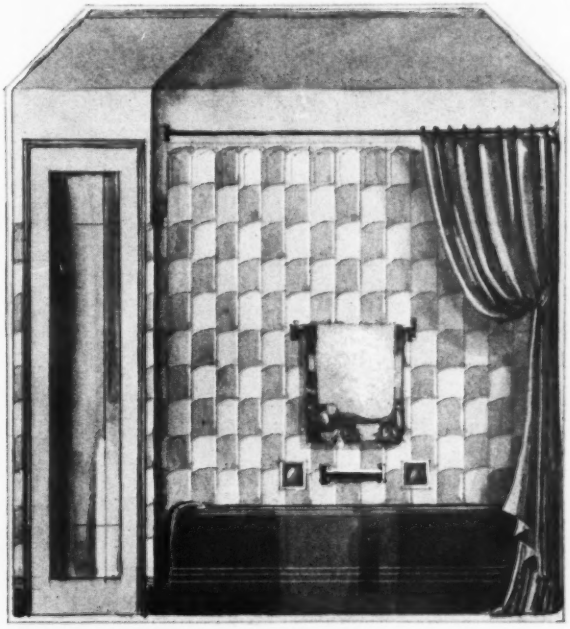


Fig. 5—The two views above were developed in colors to show what could be done in the space allotted the guest's bathroom. Changes ordered by the owner makes the comparison between the actual and the proposed less remarkable than in the case of the master's bathroom. However, there is a high degree of similarity both in color and lay-out. Compare Fig. 5 with Figs. 6 and 7

wall treatment. The owner decided upon mural oil paintings and the tile was changed from flat to corrugated, the corrugation being vertical. The fixtures were installed blue according to the original suggestions. Regardless of these somewhat minor changes, it can be seen by comparing the drawings with the actual photographs that the installed bathrooms are conscientious reproductions of the originally proposed lay-outs.

In the guest's bath, the owner eliminated the shower and, automatically, the green draped shower curtain. With this spot of outstanding color removed, he was skeptical as to the advisability of installing the green tile base called for in the original design and this was replaced by black tile. Another change resulted from the owner's desire to have the lavatory on the outside rather than on the inside wall beside the door as called for on the plan of Fig. 9. In addition to this,

Fig. 6—In the view at the left, the lavatory is deep red in color as is the water closet in the room and also the tub in Fig. 7

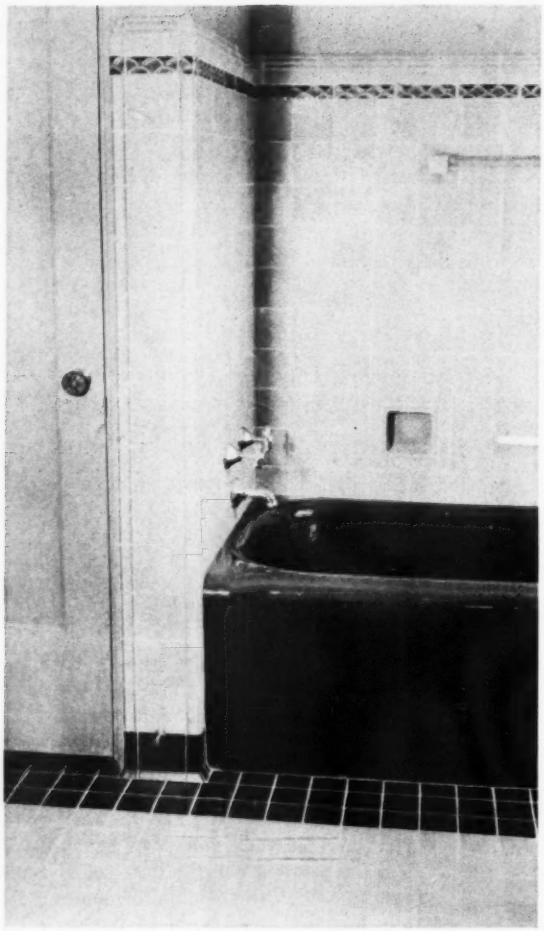
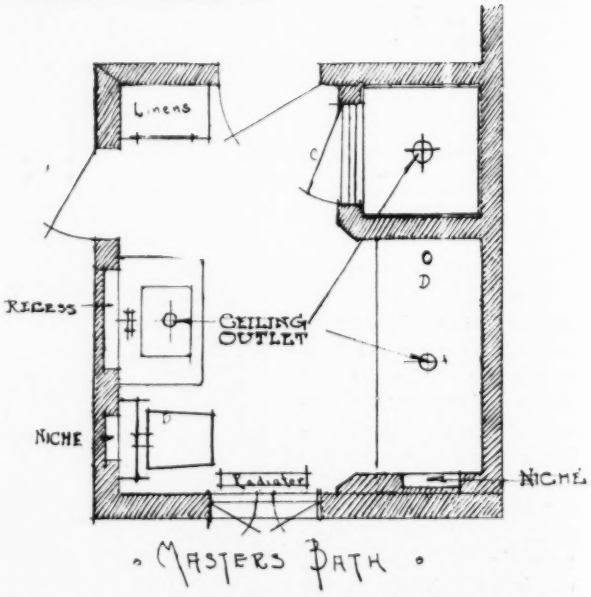


Fig. 7—This shows the red bath tub in the guest's bath. Comparing the view with that which was proposed in Fig. 5, will further serve to illustrate how closely the proposed lay-out was followed

Fig. 8—Below is shown the floor plan of the master's bathroom. Mr. Kuenzli's practice is to have the architect or owner assign him a space where they want the bathroom installed and then he develops the entire lay-out for color, convenience and proportion



the shape of the wall tile was changed to a regular square with no checkered effect.

The views in Figs. 6 and 7 show how the finished guest's bathroom appeared and should be compared with the views in Fig. 5, the drawings after which it was patterned.

The completed job is a piece of quality work. It stands to show that a plan, drawing or effect can be reproduced faithfully as far as plumbing is concerned, even beyond the expectations of the owner.

The quality of the job was not confined to appearances. Mr. Kuenzli stated that he has observed on numerous occasions when cracks occur in tile shower stalls, in most cases they are in the corners. The result is that when the spray hits the corner, water leaks through the crack in the tile and plaster. Usually the evidence appears on the downstairs ceiling and the plumbing contractor is held responsible because water is involved as causing the damage. This is especially so in Mr. Kuenzli's case because he makes a specialty of taking the general contract for an entire bathroom installation including the tile work. His practice is to sublet the contracts other than plumbing and heating to a general contractor or to sub-contractors and in either event to retain the direct supervision and responsibility to the owner. As a result it has become necessary for him to take precautions against defects in this other work in order to prevent dissatisfaction with the job as a whole or any part of it.

With this in mind, he has devised means to protect this weak point in the construction of tile shower stalls built up on the job. This consists of waterproofing the corners. The details are illustrated in Figs. 11 and 12. A cross-section view of the elevation is shown in Fig. 11, while Fig. 12 shows a cross-section plan view through a corner at A-A', and the method employed in turning up one of the corners of the lead pan receptacle. Undoubtedly it would be most clear to describe the various details in the order of their installation on the job.

Assuming that the shower-stall space has been framed out with 2-in. by 4-in. studs, in the customary manner and that the rough flooring has been laid to take the concrete sub-floor, the contractor in question installs his floor drain and a first layer of concrete is poured. This is seen in Fig. 11.

There is one item of importance which should be mentioned in connection with the placing of the floor drain. When a shower is used, it is customary for

(Continued on Page 60)

"A dirty boiler," was the verdict, because when the job was first fired, the water line dropped out of sight. After water was added, and the system operating a while, all the water returned, and much of it had to be drained off. EARL BROWN tells what he found when

Hunting a Disappearing Water Line

WHENEVER we receive a report that "The water is syphoning out of the boiler," "The water is being drawn out of the boiler by the vacuum on the return main," or that "The water backs out of the boiler," we usually say to ourselves, "Another dirty boiler!" We have formed the habit of jumping at this conclusion because we have found by experience that such reports are usually caused by a priming or foaming boiler. Like all rules in this world of ours, this one does not always work because every once in a while we find a job in which the trouble is not at all caused by a dirty boiler.

The Miller job comes to mind first because it was serviced just a short time ago. The contractor on this job was an old experienced heating man who has done a great deal of good work, so we were a little surprised when he wrote in as follows:

"Gentlemen:

"We are having trouble with the Miller job in Minton, Illinois. The job acts just as it would with a dirty boiler; that is, when we fire up, the water line drops so rapidly that we have to let in cold water. After a few minutes the water all comes back and we have to drain some out. This is dangerous, of course, and in addition is a nuisance and a waste of heat.

"I am satisfied that the boiler is not dirty because I

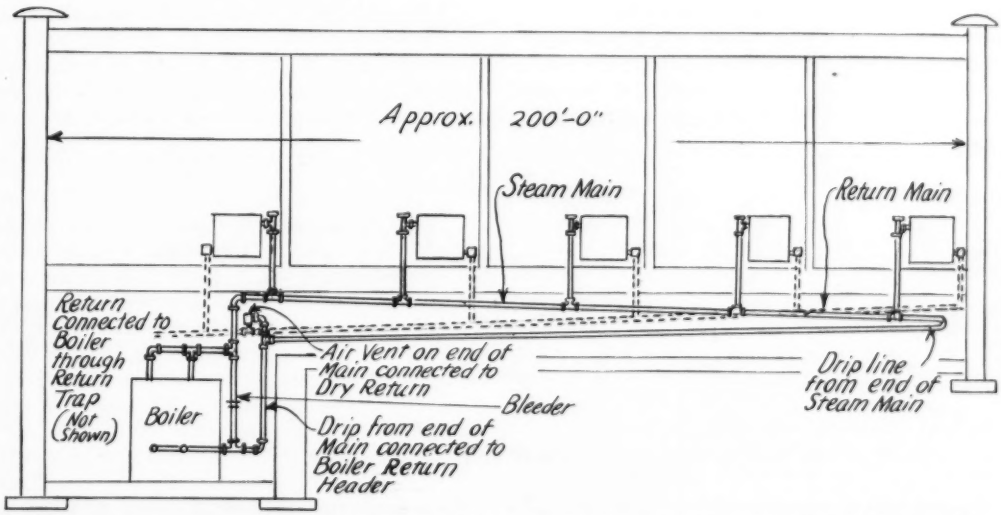

Approx. 200'-0"
Steam Main
Return Main
Return connected to Boiler through Return Trap (Not Shown)
Boiler
Air Vent on end of Main connected to Dry Return
Bleeder
Drip from end of Main connected to Boiler Return Header
Drip line from end of Steam Main

Fig. 1—This is a diagrammatic lay-out of the piping for the low pressure vapor system installed in a one-story store building which developed a disappearing water line

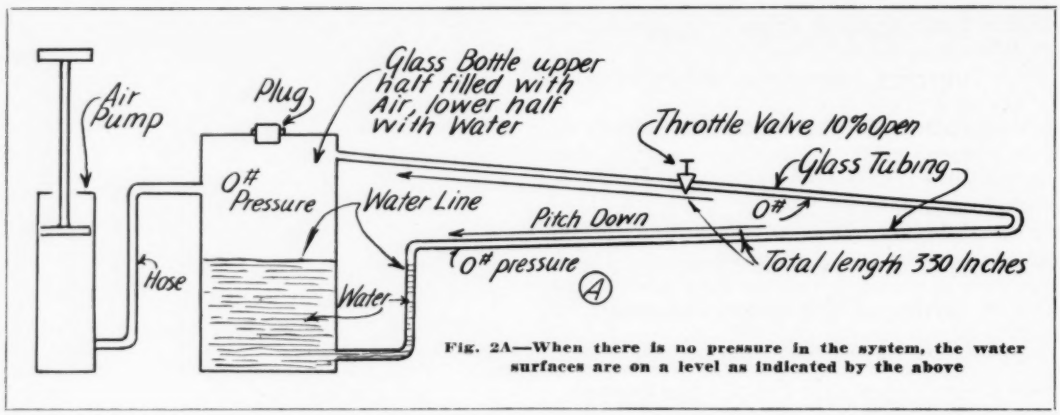


Fig. 2A—When there is no pressure in the system, the water surfaces are on a level as indicated by the above

have tested it every way I know of and all the tests show it to be clean. For example, today when we had five pounds of steam on the boiler I pulled the safety valve. The steam came out perfectly dry and the water line was as steady as a West Pointer. In my opinion this is almost positive proof that the boiler is not priming,

The next time I was near Minton I dropped in to see Mr. Warner. He greeted me by shaking my hand vigorously and saying, "I'm sure glad to see you. Miller called me last night and told me in rather strong terms that if we didn't fix up his job soon he was going to have Hart, my competitor across the street, see what

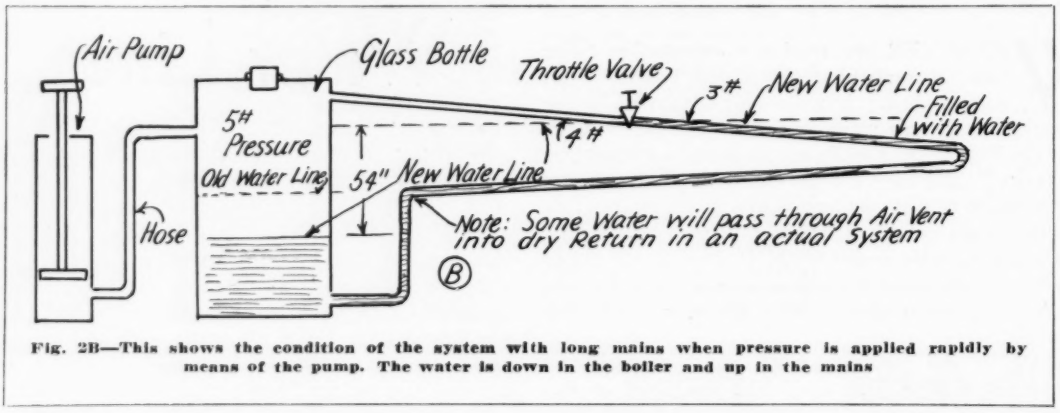


Fig. 2B—This shows the condition of the system with long mains when pressure is applied rapidly by means of the pump. The water is down in the boiler and up in the mains

but every time we fire up the water leaves almost as quickly as you can say 'Jack Robinson.' After the system has been operating a while, it works perfectly.

"Frankly, gentlemen, I'm stumped and I will appreciate it very much if your service man will drop in to help me the next time he is in our section of the state.

"Very truly, John Warner."

he could do. I managed to calm him down enough to wait a few more days."

"I guess I came just about the right time," I said.

"I'll say you did. Shall we go right over?"

On the way he repeated what he had written to us but could not add anything, so I really had very little information to work on when I arrived at the job.

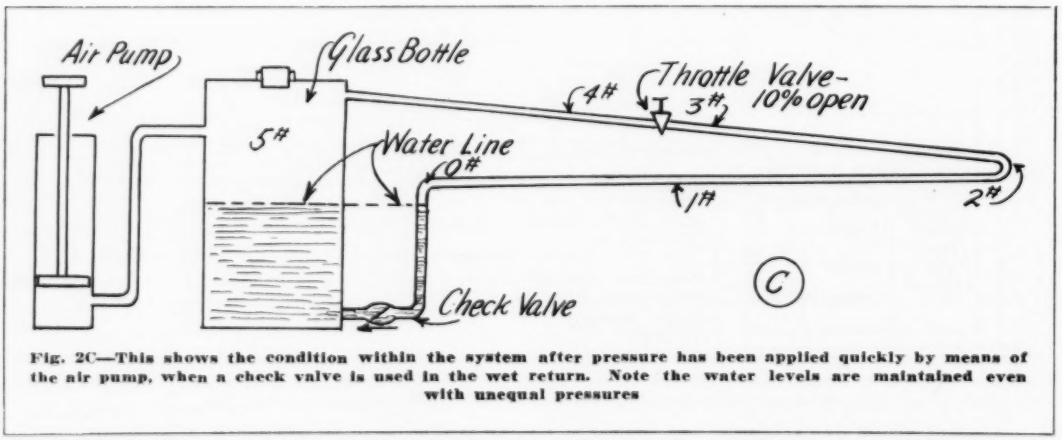


Fig. 2C—This shows the condition within the system after pressure has been applied quickly by means of the air pump, when a check valve is used in the wet return. Note the water levels are maintained even with unequal pressures

I found it to be a regular low pressure vapor system in a large one-story store building. As shown in Fig. 1 the boiler was located in the basement of one of the end stores, while the piping was all run in a pipe trench under the other stores. A drip line was run from the end of the steam main and connected to the return header of the boiler as shown in the sketch. This drip line was necessary because the pipe trench was not deep enough to be below the water line of the boiler.

I looked over the job but could find nothing wrong. At the time the fire was low and the gauge showed no pressure on the boiler. Evidently the boiler had not been fired for some time because the radiators were all cold. The janitor gladly started to fire up at my suggestion. Before doing so he turned to Mr. Warner and said, "You'll watch the water, won't you?" So Mr. Warner stationed himself where he could watch the water line and also reach the cold water valve.

The janitor opened the smoke pipe damper, closed the cold air check damper in the stack and opened the draft door in the side of the boiler. Then he brought in a wheelbarrow of coal and dumped it in front of the boiler. The coal was a variety of mine run coal with which I was not familiar. When the janitor threw in the first shovelfull of coal things started to happen. That coal was so free burning that it seemed to flash into flame as soon as it landed on the grate. The draft was excellent, otherwise the fire certainly would have flashed back out of the fire door. The janitor threw in a half dozen shovelfulls and closed the fire door. I've seen a lot of boilers fired but I've never seen a faster fire in all my experience.

The boiler gauge hand moved around like the second hand on a watch and within a very few minutes the pressure increased from nearly nothing to a pound pressure. As the pressure increased the water line dropped until it was out of sight. As the water descended in the glass Mr. Warner slowly opened the water valve, so that it was not very long before the water was again visible. As soon as the water was in sight he shut the valve and turned to me saying, "The water will soon be back again."

Sure enough it did gradually return so that we had to drain out a great deal of it. This certainly was a strange way for the system to act, so I began looking around for the trouble which should be apparent.

The header connections seemed to be satisfactory, the return trap was connected properly, and I soon proved to my own satisfaction that the boiler was not foaming, by pulling the safety valve when there was a pound of steam on the boiler. The steam came out as dry as tinder.

Again I looked around in the hope of finding the trouble. I climbed in back of the boiler to follow the wet return between the point where it was connected to the end of the drip line and the return header. To my surprise I found there was no check valve in this short wet return, so I turned to Mr. Warner and said, "Here's the trouble. Your fitter forgot to install a check valve in this wet return."

"No he didn't," he replied, "I told him not to."

"Why?"

"I didn't think it was necessary, so I left it out."

"What made you think that check valve was not necessary?"

"You remember the three houses in the New Addition in which I installed vapor systems last year, don't you? Well, on the first one the fitter did forget the check valve in the wet return. The job had been operating for two or three weeks when I discovered that the check valve had been forgotten; but it was operating so well that I did not bother to put the check valve in. This job seemed to work perfectly without a check valve, so I left out the wet return check valves in the other two intentionally. They too worked as fine as any job ever did, so I decided after that to omit the wet return check valves. That's why I told the fitter not to install one."

"I understand."

"Tell me, why do you think we need one on this job when apparently they were not necessary on the other three jobs?"

"Before I answer, permit me to ask you a few questions. The other three jobs were small homes, with the largest main only 30 or 35 ft. long, weren't they?"

"Yes."

"The steam main on this job including the drip line is about 330 ft. long, isn't it?"

"Yes, about that."

"What kind of coal is used in the other jobs?"

"I don't remember the name, but they all use a good grade of bituminous egg coal." (Continued on Page 141)

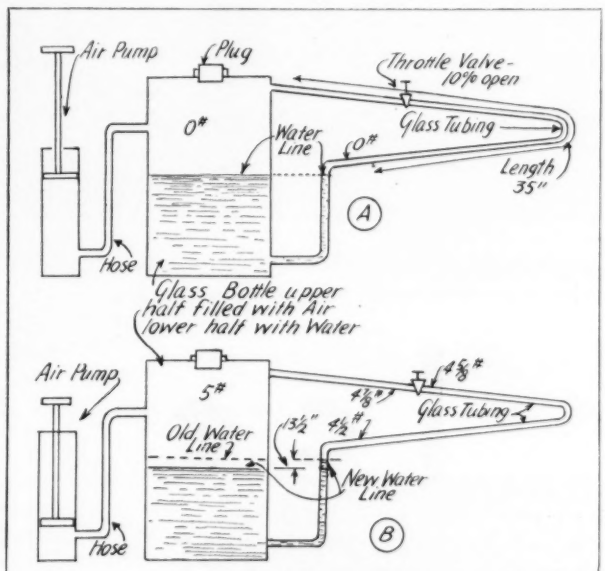


Fig. 3A—Here are the conditions which exist in a system having short mains, when there is zero pressure. The water levels are the same

Fig. 3B—This shows that in a system with short mains, even after the pressure of 5 lb. per sq. in. has been applied quickly, the distribution of pressure also is rapid and there is little fluctuation of the water line. In this case the water levels are nearly the same

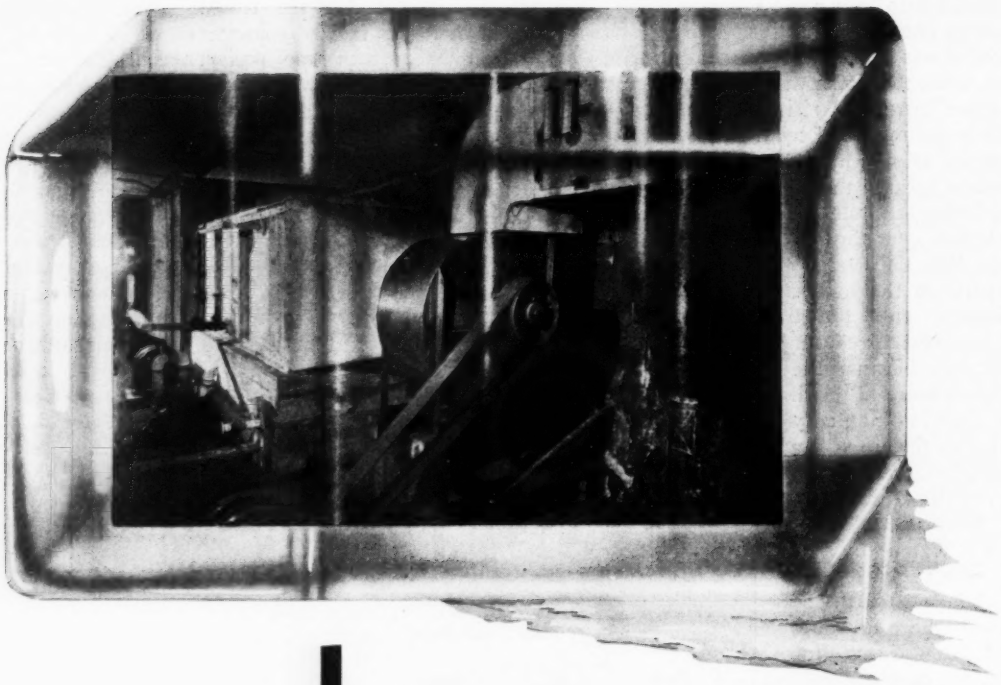


Fig. 1—This equipment was installed to cool an assembly room by means of melting ice. With outside temperature ranging from 95 to 97 deg. Fahr., the inside temperature was maintained at from 78 to 80 deg. Fahr.

Ice Used for Cooling

By G. J. GRIESHABER

AN assembly room for meetings of various women's organizations is maintained and operated as part of the advertising program of The City Ice and Fuel Company, Cincinnati, Ohio. Women's clubs, lodges, auxiliaries, etc., are invited to the assembly room for afternoon meetings, where they are served a meal, given a lecture on the uses of ice, and then play cards the rest of the afternoon.

It was soon discovered that with the hot days of summer creeping on, it was becoming more and more uncomfortable to eat, hear a lecture, and play cards. To make the conditions as comfortable as possible during summer weather, an air washing and cooling system which uses ice as a cooling medium was installed. A centrifugal fan draws the warm air from the assembly room through a large exhaust grill in the wall to the air washer and cooler. The fan then delivers the cooled air through a duct to three inlet grills in the assembly room. This complete system is located in a loft adjoining the assembly room. The air, in passing through the washer and cooler, comes in contact with ice-cooled water from fifteen spray nozzles. This contact of air and the finely divided spray of cold water cools the air and at the same time washes all dust and foreign matter from it.

The cooling of the air is accomplished merely by having it come in direct or indirect contact with the cold water spray and the water is made cold by the melting of ice. In the front part of the air-cooler water-pan is a space in which ice is placed to cool the water. This water is then pumped through the spray nozzles, it absorbs heat from the warm air, is re-cooled, and then is recirculated. A fractional horsepower motor and a small centrifugal pump, along with a two horsepower motor and fan for circulating the air, comprise all the machinery necessary for the cooling system.

The assembly room has a maximum seating capacity (at card-tables) of sixty-four, and a content of 9,000 cu. ft. The fan delivers 2,000 cu. ft. of air per minute, hence all the air in the room is washed and cooled once every 4½ minutes. Fresh air enters the room by infiltration around ten large windows and a door, and through an opened window if necessary.

Several tests were made in the room to determine what temperatures could be maintained with certain outside conditions. With outside temperatures ranging from 95 to 97 deg. Fahr., the inside temperature was kept 17 deg. Fahr. lower. With outside readings of 87 to 89 deg. Fahr., the room temperature was kept at an average of 10.5 deg. Fahr. lower, and on one day, with the outside showing 83.7 deg. Fahr., the room

temperature was maintained only 8.5 deg. Fahr. lower. These varying temperature differences were desirable because with a room temperature very close to 70 deg. Fahr. on the hottest days, the shock of the temperature difference upon entering or leaving the room would have been very great. With the relative humidity of the inside air ranging from 58 to 70 per cent, the room at all times was considered very comfortable. This cooling of the room was accomplished by the melting of an average of 280 pounds of ice per hour in the melting chamber. The illustration in Fig. 1 shows the assembly room air conditioning unit which utilizes ice.

Cooling With Ice in a Residence

The same type of system on a smaller scale is practical for residence cooling. In order to demonstrate this, a cooling unit was installed in a private residence.

The unit operates on exactly the same principle as the previously explained system, hence, since the cold water cools the air, ice is again used very effectively to cool the water. The air washer and cooler unit is located in the basement of the residence and the warm air is drawn to it through a large return duct from the first floor. A centrifugal fan then distributes the cold air through ducts to three inlet registers on the first floor and three on the second. For test purposes all six of the registers were left open and all the rooms were cooled at once. However, if it were desired to cool only the first floor, the upstairs registers could be closed and all the cold air would enter the first-floor rooms.

In giving consideration to the subject of home cooling with ice, certain questions immediately come to mind and the following undoubtedly may be listed among the first and most important. They are answered in the article along with others not listed.

1—What is the operating temperature of the water after it leaves the cooling tank and just before it is delivered to the sprays?

2—What is the temperature of the water when it leaves the spray chamber and after it has taken on heat from the air?

3—How were the charging periods determined?

4—What is the entire capacity of the water tank?

5—What proportion of the capacity of the tank is given to ice and what proportion to water?

The unit was charged for a test with 1,000 lb. of ice, and the system was then turned on at 1:10 p. m. The temperature of all the rooms began to drop until at 4:00 p. m., with a maximum outside temperature of 87 deg. Fahr., the first floor temperature was 76 deg. Fahr. and the upstairs 77.5 deg. Fahr., with a relative humidity of 68 per cent. The melting rate in this unit averaged 120 pounds of ice per hour. Fig. 2 shows the unit installed.

In this private residence the cooling unit had to be connected to existing hot-air ducts in the wall.

In regard to the water temperatures on and off the sprays, it was not possible to

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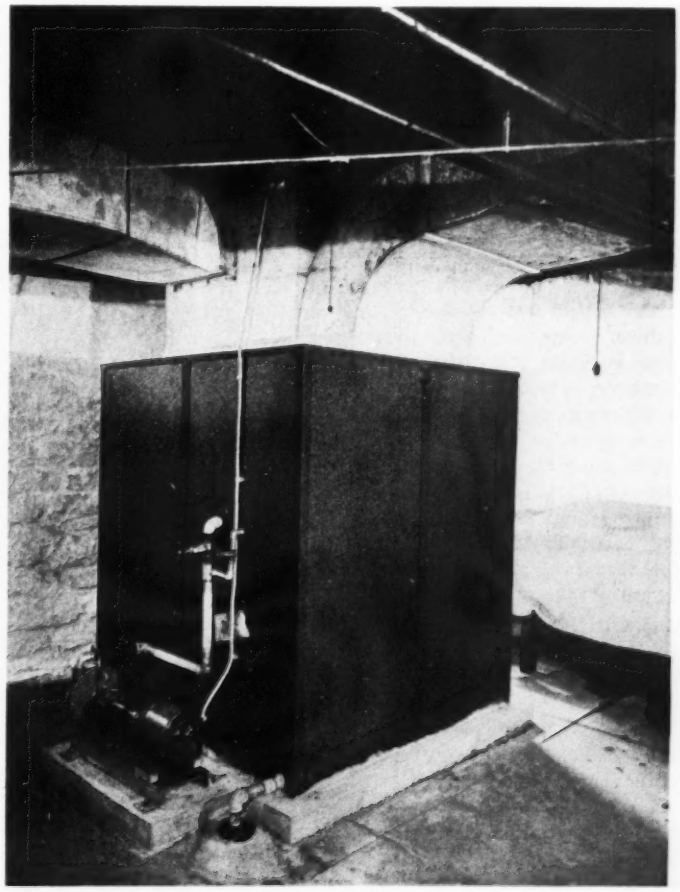


Fig. 2—In this residential installation, cold water obtained from the melting ice is forced through sprays by means of the motor and pump shown at the lower left. This spray of cold water cools the air which is distributed to the rooms in the house

Fig. 1—A remodeled New England farm house

The Evolution of an Interesting Country Water Supply System

By R. M. STARBUCK

THE story of the supplying of water to the little country home shown in Fig. 1 is an interesting one. From it can be gained a number of worth while facts concerning the mechanical problems solved in obtaining a satisfactory water supply under difficulties. Our real purpose in telling the story, however, is to offer it as a clear-cut example of the progressive steps that often must be taken by the plumbing contractor in providing a home with the best plumbing comfort that it can afford.

There is no doubt too many of the plumbing trade are prone to consider that after they have once outfitted a home with satisfactory plumbing equipment, thereafter that home is out of their mind and off their lists as a prospect for further plumbing equipment.

Fig. 2—A method of obtaining pressure

Listen to the story of this country home and you will see what we mean.

Originally this was a typical New England country dwelling, comfortable in many ways, but nothing to brag of in plumbing comfort.

The house contained the old style cast iron sink in the kitchen, with a hand pump delivering water from a well. Additional toilet facilities were summed up in an out-house located at some distance from the house.

Some years ago the house changed hands. It came into possession of an artist, who proceeded to make for himself a combined home and studio. One of the first things that the new owner did was to pull the old sink out and replace it with a modern enameled fixture. The out-house was scrapped

and a first-class bathroom installed on the first floor. Formerly the sink had discharged onto the surface of the ground. Now a cesspool is in operation. The pump is still used for the drinking water supply, but for other household purposes water from a nearby brook was delivered by a hydraulic ram to an elevated tank, which supplied the plumbing fixtures with water under pressure.

This pressure tank was set up on a wooden framework out in the middle of a field in order to gain necessary head. A picture of this part of the equipment is to be seen in Fig. 2.

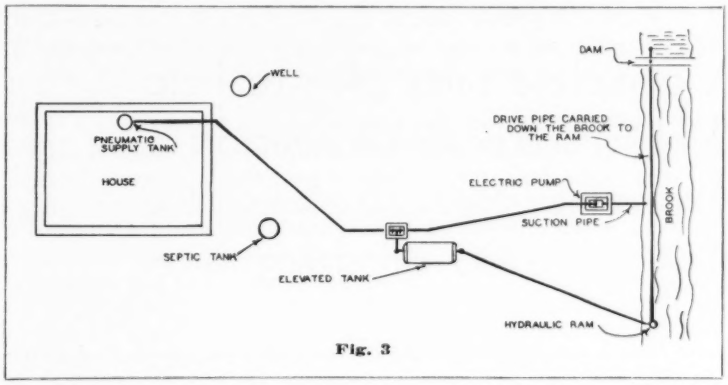


Fig. 3

The ram and the elevated tank were satisfactory and entirely practicable, for the house at this time was used only as a summer home.

It will be seen that while the first step in providing the house with plumbing did not amount to much as a plumbing contract, this second step gave someone a good job. The supply from the ram, as we shall later see, was not a simple matter, and this part of the work alone represented a considerable amount of work.

The next step was the installation of a second bathroom upstairs. A bit later came a set of laundry tubs and still later a septic tank to replace the old cesspool.

We want to call your attention to the fact that each one of these steps brought the plumber a good job.

In this case it seemed the hydraulic ram was the only source of supply that could be used at the time of its installation.

Last year the house began to be used all year round, and then the existing water supply was found inadequate in many ways. In spring floods the ram was under water. In winter the tank and its connections froze up. As a consequence, the first winter was a failure as far as plumbing comfort went.

This last spring, however, electric light wires were strung up the road on which the house is located. This made possible the installation of an electric pump and a pneumatic tank. This work has just recently been completed, and one would certainly think that now at last the home was equipped with every needful thing pertaining to its drainage and water supply.

And yet we heard the owner make the remark that he would not be fully satisfied with the layout until he had sunk an artesian well. And so, even now the plumber and the well driller seem due to have still further work in providing plumbing equipment for this home.

It may be argued that in this particular instance the owner was unusually interested in obtaining for himself and his family all the comfort and convenience that plumbing could bring to them. That is very likely true. Nevertheless, the wise plumbing contractor, if he is alert, will not fail to bring to the owner's attention all the possibilities that are present and available, and do this as a part of his business routine.

There are quite a number of other houses on this road, and now that electricity is available, it ought to be the business of some local plumber to campaign among these people with the object in view of pointing out the possibilities and convincing the various owners that now perfect plumbing facilities are available to them. There would seem to be no end of business that might be obtained in this way.

Today the country resident is just as sophisticated, just as refined and intelligent as the city man, and he presents a wonderful opportunity as a prospect for the use of plumbing equipment.

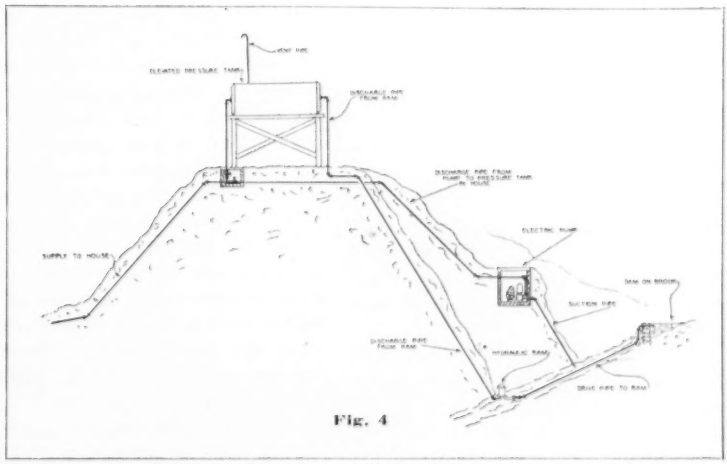


Fig. 4

Now let us see something of the leading features of this country supply system.

Fig. 3 shows the general layout. As a new source of supply has been installed, the old equipment has not been pulled out, but connected up with the new.

In Fig. 4 we have endeavored to show as clearly as possible the chief features of this supply system.

It will be appreciated that because of lack of space for our drawing, the slope on either side of the elevated tank has been exaggerated, likewise the slope of the brook.

As a matter of fact, in order to get sufficient slope on the drive pipe to operate the ram and deliver water

(Continued on Page 140)

PLUMBING and HEATING

The Remodeling Sales Kit

A complete sales plan to help plumbing and heating contractors to increase their share of business in the $500,000,000 remodeling market

IN the pages of the "Plumbing and Heating Merchandising" section there is the material for a complete, co-ordinated selling effort to secure remodeling jobs. Following the custom it established three years ago, DOMESTIC ENGINEERING publishes a new set of ten newspaper ads, which may be secured in the form of mats, at a nominal price. They give the contractor the advertisement complete, except for his name, address and telephone number. Details concerning these mats are given a little later.

But, in the meantime, DOMESTIC ENGINEERING has been working in other directions to assist the contractor who must now depend upon new business in old homes for his volume and profit. After the first series of newspaper advertisements were published, came the second series. Then we worked out two of the most practical helps the industry has ever been offered.

First there was the "Guide To Remodeling Sales," a simple, brief, but comprehensive statement of the various steps to be taken in building up contacts with and sales in the older homes in the community. That "Guide to Remodeling Sales" is reprinted in this section, on the sixth and seventh pages.

With the guide, we also offered two inspection charts—one covering the plumbing system, and the other covering the heating. On the word of contractors, manufacturers and wholesalers, nothing so valuable, nothing so designed to help get down to business in the matter of making remodeling or replacement sales, had ever before been available. Armed with these inspection charts, the contractor himself, or his journeymen, can make a swift and complete check of plumbing and heating, missing nothing. With them, he can show his customer that the process of supplying water for the fixtures, and heat for the home, is a matter of far more complexity than the home owner has ever thought it to be.

On the fourth and fifth pages of this section, we have once more reprinted the inspection charts for the convenience of our readers. They can be used as they appear in these pages. At the time they were first printed, thousands of copies were called for from all over the country.

On the last page of this section we show our latest addition to the material created for the use of contractor-dealers in promoting remodeling and replacements. Full details concerning these posters will be found on that page. Here, again, thousands of the posters have been put to work by plumbing and heating dealers to keep the remodeling idea fresh and productive.

We recommend a careful reading of the newspaper advertisements, and the prompt placing of an order for these ten mats. We offer them to our readers at what they cost us —25c—or $2.50 for the set of ten mats. Any plumbing contractor who wishes to use only the five advertisements dealing with plumbing, may order them for $1.25. Similarly, a heating contractor may secure the mats for the five heating advertisements at the same price—$1.25.

It might be well here to recall the enthusiastic reception of these advertisements by contractors when the previous series were issued. Take the first set, for example. Immediately upon publication we received orders for the mats from all over the country. A careful check-up of the use of these advertisements showed that, during the period of about ten weeks, those contractors who had bought and used the mats had reached over 7,000,000 people with the remodeling message.

Here are some of the expressions received from contractors who used the advertisements: "I believe these mats are the best and cleanest cut advertising we have ever had." Another contractor said: "It may be of interest to you to know that we have secured excellent direct results from the use of the ten advertisements sent us for the remodeling campaign. The campaign brought remodeling work in eight homes and was instrumental in securing the job of furnishing the latest in plumbing ware for a model home."

In using these advertisement mats, the contractor is relieved of all details in connection with his newspaper campaign. He merely hands the mats to the paper, with instructions as to when they are to be run. The mats are complete. In preparing the advertisements, the paper merely adds the name, address and telephone of the dealer.

Meanwhile, the contractor should have studied the "Guide To Remodeling Sales," and have taken the

MERCHANDISING

proper steps to work up his prospects, instruct his journeymen and his office workers, use the posters in his windows, on his trucks and cars and organize his time for following up inquiries which all this work will develop.

A reading of the advertisements will show that they are designed to secure inquiries. Every headline has been carefully studied, and worded so that it will catch the attention of the reader. A touch of humor has been used wherever possible—just enough to tickle the fancy of the reader and get him into the copy before he realizes that he is actually reading it. Or, as in the case of the heating advertisement where the child is in danger of scalding itself, the intention is to make the reader see sharply one of the drawbacks to the heating plant that must be manually fired. The success this type of advertisement has had argues well for the effectivness of the ads in this section.

By carrying these advertisements in the newspaper, backing it up with sales letters to selected prospects, the display of the posters, the instruction of the employes, and personal contacts, the contractor will have the bene-

MODERNIZE NOW! **MODERN HEATING MAKES MODERN HOMES** REMODEL NOW!

Is this the breakfast hour in your home?

While pancakes and pork sausages grow cold and rubbery, do you wrestle with your heating plant? If so, you're wronging your wife's cooking—and your pocketbook.

A modernized heating plant will self-start in the morning—and will save money on fuel. We can show you examples of modernized plants in this community—and give you the figures.

Phone for an appointment to hear the facts. They'll cost you nothing.

MODERNIZE NOW! **THE DIFFERENCE BETWEEN AN OLD HOUSE AND A NEW ONE IS PLUMBING!** REMODEL NOW!

Are your plumbing fixtures poor relations?

When you have the kind of guest who manages to see everything, do you feel that your bathroom fixtures do not match your other furnishings? You know . . . the feeling that you'd just as soon they weren't seen?

You would be as proud of modern bath fixtures as of your charming living room. Perhaps a few minor changes, the addition of a little touch of color would modernize your bathroom. We'd be glad to advice you. Just phone.

MODERNIZE NOW! **THE DIFFERENCE BETWEEN AN OLD HOUSE AND A NEW ONE IS PLUMBING!** REMODEL NOW!

Of what "period" is your plumbing?

of the leg-of-mutton sleeve-bustle and square piano period—of the modern colorful, cleanly, convenient period? Today plumbing has color, beautiful lines, surfaces easily cleaned.

When we say "modernize your plumbing," we mean to make it as sensible as modern women's clothing, as stylish and colorful. It can be done at small cost—because we have specialized in modernizing.

Just phone for an appointment—you will be aggreeably surprised with our sections.

MODERNIZE NOW!
THE DIFFERENCE BETWEEN AN OLD HOUSE AND A NEW ONE IS PLUMBING!
REMODEL NOW!
Have you ever really *thought* about your plumbing?
When you choose furnishings for your other rooms, you really think about harmony of design and color. But most of us have to confess that we take plumbing furnishings for granted.
Was your present plumbing chosen with an eye to design, to color, to ease in cleaning, to sparkling beauty of chromium fittings?
If not, we want you to see our display of fixtures and accessories—to realize how easily your plumbing arrangements may be as satisfactory and convenient as your other furnishings. Drop in on your next shopping trip.

MODERNIZE NOW!
THE DIFFERENCE BETWEEN AN OLD HOUSE AND A NEW ONE IS PLUMBING!
REMODEL NOW!
Delighted—until they saw the plumbing?
To sell or to rent—that is the problem. And many an otherwise satisfactory house or apartment is passed by because its plumbing arrangements are at a disadvantage in comparison with those in more modern buildings.
A relatively small sum spent to modernize plumbing will solve that problem, bring a better price or, where it is done for the family, give new comfort and delight to the home.
It will cost you nothing to have us advise you—and you will be charmed by the effects possible—at reasonable cost. Just phone.

fit of a closely-knit effort. The fact that the poster appropriate to plumbing is at the head of each plumbing ad, and the one on heating is at the head of each heating ad, will identify the store and the trucks of the contractor using them, with the newspaper ads.

Remember, the cost of the mats is purely nominal, because DOMESTIC ENGINEERING is ordering them in quantities. To spend $2.50 for complete copy and illustrations for ten newspaper insertions is, of course, far less expensive than if the contractor had the copy prepared locally and had to purchase his own illustrations and cuts. One drawing alone would cost more than the ten mats.

Send in your order promptly. Just pin your check to your letterhead for $1.25 or $2.50—depending upon whether you want five or ten of the ads, and write the words, "Advertising mats" on your letterhead. We'll know what you mean.

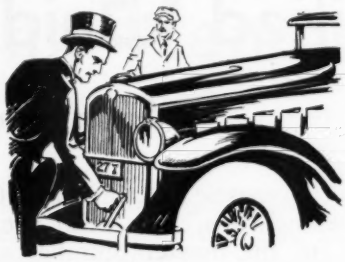
First study the "Guide To Remodeling Sales" carefully. Then familiarize yourself, and your workers, with your plan, and particularly with the two inspection charts so that all will know just how to use them. In addition, there should be copies of the posters in your windows, on your trucks and in your store. Then schedule your newspaper advertisements—whether they are to run once or twice a week. Hand the mats to your local newspaper with these instructions. If you plan to send letters on remodeling to your prospects, use the ideas in the advertisements—or ask DOMESTIC ENGINEERING to help write your letters. There will be no charge for such assistance.

Order the ten newspaper mats promptly.

MODERNIZE NOW!
THE DIFFERENCE BETWEEN AN OLD HOUSE AND A NEW ONE IS PLUMBING!
REMODEL NOW!
Modernize your plumbing for profit
That's good advice, based on the experience of many of your fellow citizens. They have discovered that modernized plumbing adds value far beyond the cost, aids financing the home, brings better rentals and selling prices—or gives the family new pleasure in the home.
We can give you facts on a number of modernizing jobs. They are our specialty. We will be glad to advise you and show you just what can be done in your home or apartments. Just phone for an appointment.

MODERN HEATING MAKES MODERN HOMES

MODERNIZE NOW! REMODEL NOW!



Does your heating plant have a self-starter?

Imagine buying a beautiful car—and having to crank it! It just isn't done. But you'd be surprised to know the number of heating plants that have to be "cranked" several times a day. That is, unless you have a heating plant of that kind.

There's as little reason for that as for cranking a car. Modern heating plants obey their own alarm clocks in the morning and all day obey the automatic controls that feed them and call for precisely the heat you want.

All this at a saving. Phone for an appointment and some surprising examples.

MODERN HEATING MAKES MODERN HOMES

MODERNIZE NOW! REMODEL NOW!

What do guests think of your "disappearing act?"

Just as your game of "Murder"—or of bridge—or your conversation—is most interesting, and you have to "go down to tend the fire"—what do your guests think?

Whatever fuel you desire to burn, we'll modernize your heating plant, make it automatic under perfect control. And the cost of modernization will be paid for by savings from an inefficient plant.

Phone us. It will cost nothing to get the facts.

MODERN HEATING MAKES MODERN HOMES

MODERNIZE NOW! REMODEL NOW!

Were women meant for this?

For a number of reasons, we should say no. But one alone would be sufficient—that of economy. Hand-firing always has been and always will be wasteful in time and fuel.

Modern heating means automatically controlled heat. It means no excess heat to be wasted through opened windows—and no underheated rooms which likewise cause heat losses.

Modernize your heating plant to free the housewife of this drudgery and to save fuel. Phone us for careful advice.

MODERN HEATING MAKES MODERN HOMES

MODERNIZE NOW! REMODEL NOW!

Where's her mother ..... stoking the fire?

Because the heating plant can't take care of itself, she must "nurse" it, leaving the youngster to take care of himself.

It's just one example of the number of awkward times during the day when the housewife is interrupted at important tasks by an out-dated heating plant. For no good reason—because an automatic modernized heating plant will take care of itself (with any fuel) and actually cost less.

Phone for an appointment to hear just how we can modernize your heating plant—no obligation.

◆ ◆ A Simplified Guide for

Seven Common Sense

Remodeling, in the plumbing and heating industries, includes repairs, replacements and additions to existing systems and, also, new installations in buildings now without these conveniences. In point of business possibilities and opportunities for profit, it offers the contractor more than new construction, even when new construction is at its peak.

WHERE REMODELING OPPORTUNITIES EXIST

In the home, the apartment, the commercial building, the hotel, the industrial plant, the school, the hospital, the amusement place—wherever there are old or outgrown plumbing and heating systems or wherever there should be plumbing and heating systems but aren't—there is an opportunity for a remodeling job. The building is up—a place to live, to work, to play. For comfort, for convenience, for health, for investment value, for competition with newer buildings of the same type, its plumbing and heating should be adequate and modern.

WHO SHOULD GO AFTER REMODELING BUSINESS

Every master plumber and heating contractor can, to his profit, go after remodeling business. Whether his specialty has been or is new, big contracting work (office buildings, industrial plants, schools, etc.), new residential contracting work, merchandising, or repair and jobbing work, he can find in those same lines the opportunities and reasons for remodeling mentioned above.

HOW TO GO AFTER REMODELING BUSINESS

The process of going after remodeling business is one of developing and selecting prospects; advertising to and contacting those prospects; closing sales where interest and desire have been aroused; and arranging for payment—in cash, on open account or on a financing plan.

This "Domestic Engineering Guide to Remodeling Sales" has been prepared to outline for the master plumber and heating contractor the essential steps in selling a product, a service, or an entire system for a remodeling job. Each step can be applied to fit the particular type of work which the contractor favors. Under each of the various steps, he may use one, several or all of the suggestions, to suit his own conditions.

1. PROSPECTS

Prospects are home owners, apartment house owners, owners or managers of industrial plants, commercial buildings, hotels, institutions, etc. The principle to be followed in making up a prospect list is SELECTION. Advertising will create prospects, but every contractor has the facilities for selecting a good list of prospects himself. Sources of names, for instance, are customers; former customers; property owner lists; tax records; telephone lists; the contractor's own personal acquaintance with his market and its needs.

Other names will come from

(a) Inspections

1.—Of work completed, giving an opportunity to suggest other needs; also to secure names of friends of satisfied customers. 2.—Periodical inspection service, sold at flat rate for the year, giving an opportunity to point out needs at regular intervals. 3.—Reports of mechanics from repair jobs.

(b) Repair Calls

1.—Calls for small service or repair jobs can be capitalized. If possible, visit each job before work is done, while work is being done or immediately after. Suggest inspection of plumbing and heating equipment. Get the necessary information about the home or the building for the basis of a selling effort. (See Remodeling Inspection Charts.)

2. PRODUCTS

The principle of SELECTION works further in breaking down a prospect list to show what

Selling Remodeling Jobs

Steps to Profits

products are needed by each prospect. Then it is possible to direct specific advertising literature to each prospect, whether on home appliances and specialties or on equipment and requirements for larger types of buildings.

3. ORGANIZATION

It is essential that the principle of CO-OPERATION be at work in the contractor's organization. Mechanics must be instructed as to reporting plumbing and heating needs, trying to sell, and the general policies to be followed.

Office or store help must be ready to give accurate information on any product; must maintain prospect list and must be business-like in handling telephone inquiries from all types of prospects.

4. ADVERTISING

All of the above is preliminary to merchandising to create business. The first step in creating interest in remodeling will be advertising. The principle back of successful advertising is CO-ORDINATION. Sales will be made if window displays, newspaper advertising, sales letters, blotters or other envelope stuffers (manufacturers' literature, for example) and personal selling cover the same product or phase of service for a period of time. It may be a week, it may be a month. But if whatever forms of advertising and selling being used are so co-ordinated, each is helping, and is helped by, the others. It's common-sense teamwork applied to merchandising and advertising, and it must be applied to all types of prospects.

5. INQUIRIES

Advertising produces inquiries. The principle which turns inquiries into sales is PROMPTNESS. An inquiry from advertising is like a dividend check—it must be cashed to put the money in your pocket. Get in touch with prospect the moment inquiry is received, if only to make an appointment for later. More inquiries will be turned into sales if action is taken while the prospect's interest is fresh, and that means as soon after the inquiry is received as possible. Home owners and business men alike appreciate signs of prompt attention to inquiries.

6. THE FOLLOW-UP

A prospect may not be sold on the first call. The principle back of the successful follow-up of a prospect is PERSISTENCE. It may take four or five calls to make the sale. And during all that time, see that prospect receives new literature on the product or service; let him have testimonials from satisfied customers; have one of your customers call prospect on the 'phone, etc. If there is some point of advantage about the product which hasn't been mentioned, drop prospect a short letter giving him this additional information. Don't let the prospect grow "cold" by lack of follow-up; and don't drop him until you are certain he will not buy. If you do, someone else will step in and make the sale.

(a) Personal Selling

Set aside a portion of day for personal calls on the type of prospect you are prepared to serve. Records or knowledge of the situation will provide a number of names to work on. Start the ball rolling by a call, and then carry on with the follow-up as described above.

7. THE CLOSE

When it comes time to try to close the sale, use all the assistance possible. If customer cannot pay cash, use one of the time payment plans which are available to plumbing and heating contractors. If a wholesaler's salesman, or a manufacturer's salesman, can help in closing a sale, don't hesitate to ask for that help. It will be furnished gladly.

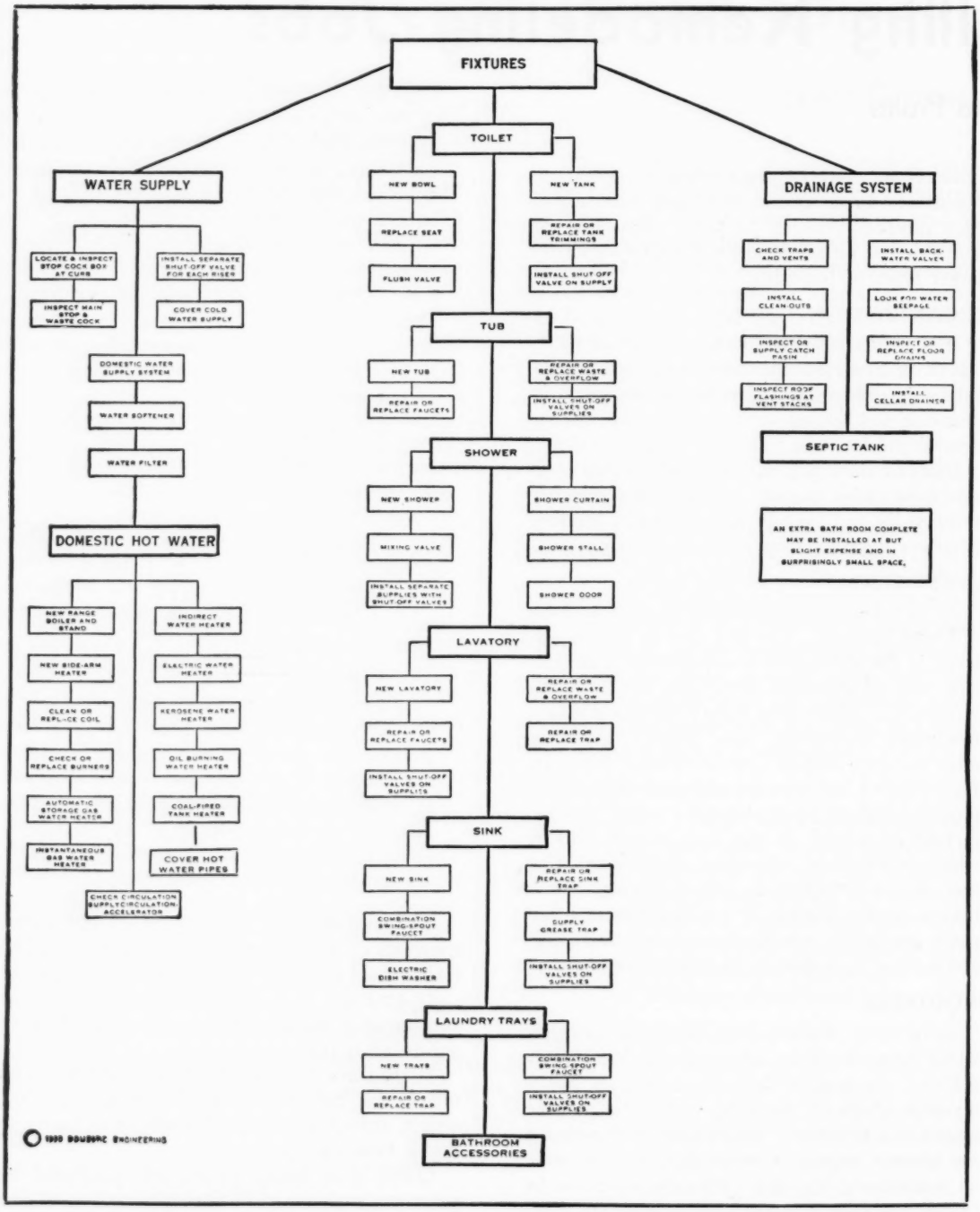
This guide is a summary of the fundamental, common-sense principles of advertising and selling. You can test every step.

If you are in a residential district, select two square blocks of homes and follow this guide as a test.

If you are interested in apartment house work, in industrial work, in institutional work, select a group of such structures and try a test campaign.

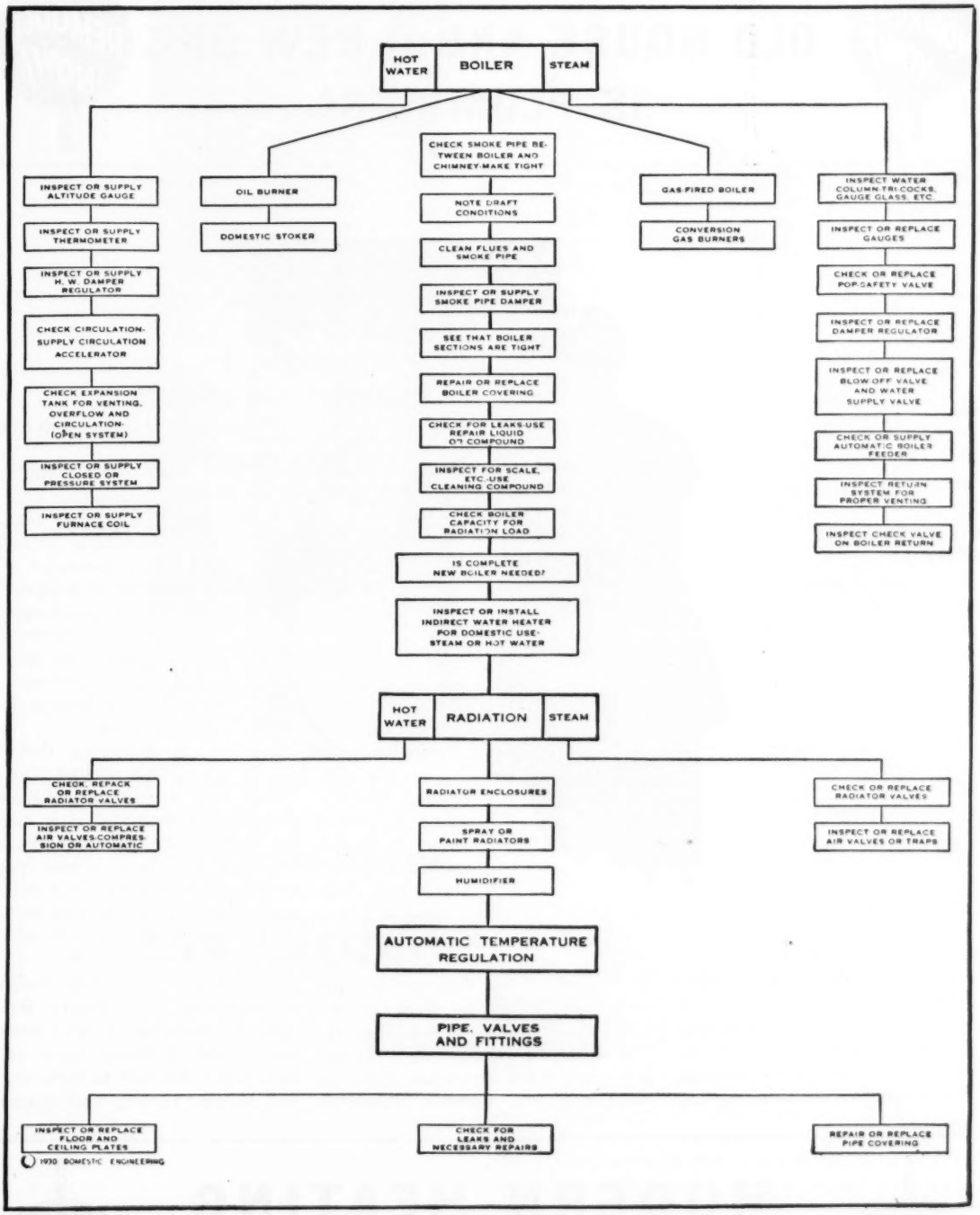
Once you have perfected yourself and your organization in the application of these principles, you can expand your merchandising effort to take in a whole community or a whole city. The principles work equally well on one prospect or ten thousand, on any of the products you have to sell, on any prospect you have to deal with, whether he be home owner, building manager or owner, engineer, or architect.

This is the DOMESTIC ENGINEERING Plumbing Inspection Chart

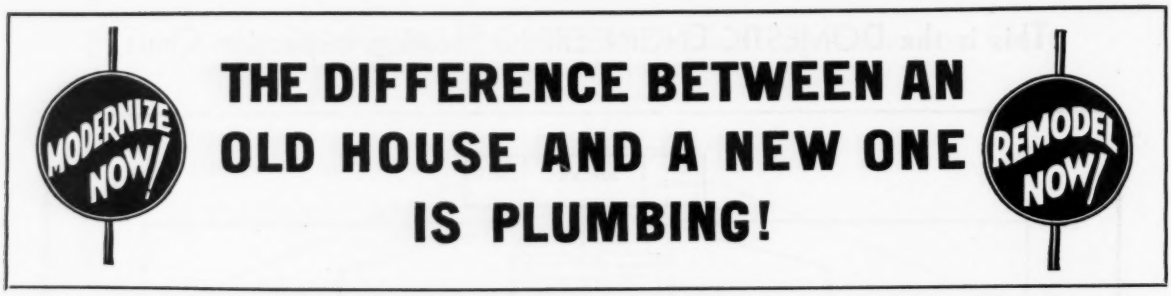


USE this chart to instruct your journeymen in the items for which they are to look when on a repair job—or use it on the job when you are making an inspection of a plumbing system. It overlooks nothing and will be a source of many leads for repair or replacement sales.

This is the DOMESTIC ENGINEERING Heating Inspection Chart


HOT WATER
BOILER
STEAM
INSPECT OR SUPPLY ALTITUDE GAUGE
INSPECT OR SUPPLY THERMOMETER
INSPECT OR SUPPLY H. W. DAMPER REGULATOR
CHECK CIRCULATION-SUPPLY CIRCULATION ACCELERATOR
CHECK EXPANSION TANK FOR VENTING, OVERFLOW AND CIRCULATION-(OPEN SYSTEM)
INSPECT OR SUPPLY CLOSED OR PRESSURE SYSTEM
INSPECT OR SUPPLY FURNACE COIL
OIL BURNER
DOMESTIC STOKER
CHECK SMOKE PIPE BETWEEN BOILER AND CHIMNEY-MAKE TIGHT
NOTE DRAFT CONDITIONS
CLEAN FLUES AND SMOKE PIPE
INSPECT OR SUPPLY SMOKE PIPE DAMPER
SEE THAT BOILER SECTIONS ARE TIGHT
REPAIR OR REPLACE BOILER COVERING
CHECK FOR LEAKS-USE REPAIR LIQUID OR COMPOUND
INSPECT FOR SCALE, ETC.-USE CLEANING COMPOUND
CHECK BOILER CAPACITY FOR RADIATION LOAD
IS COMPLETE NEW BOILER NEEDED?
INSPECT OR INSTALL INDIRECT WATER HEATER FOR DOMESTIC USE-STEAM OR HOT WATER
GAS-FIRED BOILER
CONVERSION GAS BURNERS
INSPECT WATER COLUMN-TRI-COCKS, GAUGE GLASS, ETC.
INSPECT OR REPLACE GAUGES
CHECK OR REPLACE POP-SAFETY VALVE
INSPECT OR REPLACE DAMPER REGULATOR
INSPECT OR REPLACE BLOW-OFF VALVE AND WATER SUPPLY VALVE
CHECK OR SUPPLY AUTOMATIC BOILER FEEDER
INSPECT RETURN SYSTEM FOR PROPER VENTING
INSPECT CHECK VALVE ON BOILER RETURN
HOT WATER
RADIATION
STEAM
CHECK, REPACK OR REPLACE RADIATOR VALVES
INSPECT OR REPLACE AIR VALVES-COMPRESSION OR AUTOMATIC
RADIATOR ENCLOSURES
SPRAY OR PAINT RADIATORS
HUMIDIFIER
CHECK OR REPLACE RADIATOR VALVES
INSPECT OR REPLACE AIR VALVES OR TRAPS
AUTOMATIC TEMPERATURE REGULATION
PIPE, VALVES AND FITTINGS
INSPECT OR REPLACE FLOOR AND CEILING PLATES
CHECK FOR LEAKS AND NECESSARY REPAIRS
REPAIR OR REPLACE PIPE COVERING
© 1930 DOMESTIC ENGINEERING

WITH this chart in your hands, or the hands of your mechanics, you will be able to make a complete inspection of the heating system, overlooking nothing that might need repair or replacement. It will give your customer a pretty fair idea of what's involved in a good heating system.



The actual size of this slogan banner is 25 × 4½ in.

"THE Difference Between An Old House and A New One Is Plumbing!" is a slogan which was introduced by DOMESTIC ENGINEERING a few months ago to get across the idea of plumbing remodeling. This slogan, imprinted on an attractive window banner, has been distributed to plumbing contractors everywhere. Jobbers and manufacturers, too, have put this banner and this slogan to work.

"Modern Heating Makes Modern Homes" is another slogan also introduced by DOMESTIC ENGINEERING several weeks ago which features heating, associates it with the home and has that "catchy swing" that makes a good slogan.

More than 23,000 of these posters have been distributed by DOMESTIC ENGINEERING and their continued use is recommended in any concentrated drive on remodeling business. They are available to plumbing and heating contractors at cost price, $1.00 per hundred and at the same rate for greater or lesser amounts. Any number of them may be had at this price and a supply of them should be on hand so that they may be kept fresh and bright in show rooms, windows, on trucks, automobiles, etc. The slogan banners are 25 x 4½ in., and are printed on organ paper in black type, the familiar DOMESTIC ENGINEERING color combination.

The value of the material appearing in this section is, of course, that it is all recognizable as belonging to one campaign. Thus, a customer or prospect sees one of the newspaper advertisements. At the head of it appears the remodeling slogan, dealing with plumbing or heating, as the case may be.

If, following this, they see the trucks of that contractor with these remodeling slogan posters on them; and if in passing the contractor's place of business they see the same slogan posters prominently displayed, they will, naturally, have the message of remodeling by that contractor very strongly impressed on their minds.

Any reader requiring assistance in preparing sales letters for use with this material, or who wants to use several publicity items in his local paper, has only to write us. We will be glad to help such readers.

The actual size of this slogan banner is 25 × 4½ in.

We Worked Harder— and Now Have the Orders

By C. N. TULL *

BUSINESS can be accelerated sharply for dealers in the heating industry, even in times of economic depression, through the practical application of aggressive merchandising methods.

Success in the form of more business has followed the use of these methods in other industries even during 1931. We feel that we proved their value in the heating field also during September when the Spencer Heater Co. attracted hundreds of sales prospects to an automatic heating exhibition in its Philadelphia display room.

L. B. Manning, vice president and general manager of the Cord Corp., of which the Spencer company is a division, early in 1931 summarized these policies in one brief sentence:

"If a product is what the purchaser needs and the value is right, the public will buy—even in the most strenuous times,"—and one of the Cord companies, Auburn, proved this by selling twice as many cars in the first six months of 1931 as in twelve months of 1930.

Business is being secured by those heating dealers and manufacturers who are going after it more aggressively. So many competitors feel that when times are dull business must be bad. As a result, those who work more aggressively should get and do get a higher proportion of the total. This higher percentage may easily make a profitable year for one dealer when his competitors are laying back waiting for "business to pick up."

In line with Auburn's experience we seized upon the present era of nation-wide depression as an opportunity to create new business. We were confident that the merchandising methods Auburn had applied to the automotive field would apply with equal force to the heating industry.

Consequently, we outlined an entirely new program,

* President, Spencer Heater Company.

including new low prices, new products, and new merchandising methods.

For more than a year Spencer engineers had been at work on a new type of home heating boiler, one in which either gas or coal might be burned.

With our program of new prices and new products ready, we put it to a test in Philadelphia.

Just after Labor Day the exhibition was opened to the public and it continued throughout the month. Despite the unseasonable heat that prevailed at that time, a steady stream of home owners, builders, architects, and heating contractors passed through the display rooms daily inspecting the various boilers and consulting with engineers and salesmen. The exhibition was kept open evenings until 10 o'clock for the convenience of those who could not attend during the daytime.

Only a few days were required to prove the Philadelphia sales force inadequate to handle all the prospects, and salesmen were brought in from outside territories to care for the overflow. Scores of coupons, clipped from newspaper advertisements, were mailed in by people living outside of the city who desired further information.

It is impossible to gage accurately the exact results of this campaign, as it was not the purpose to sell at the exhibition. After the prospect had received full information on the type of heating equipment in which he was interested, the actual closing of the sale was turned over to the heating contractor in his neighborhood. The intense public interest in the campaign was evident, however, even to one who was only a casual observer.

The exhibition was announced to the public in a series of full page advertisements which ran in Philadelphia newspapers. Our publicity effort, however, did not end with newspaper advertising. Almost every recognized method of developing business was employed, including direct mail and telephone solicitation, and personal calls. We tried to make sure that no one in Philadelphia who might be at all interested in home heating would fail to learn of this exhibition.

During the campaign, J. A. Waddell, our chief engineer, was brought to Philadelphia to give talks on heating and advise people on their heating problems.

Every effort was made to arrange the display rooms as effectively as possible. Particular care was taken in placing the various boilers so they would be free for detailed inspection from all sides. The walls were hung with human interest color posters depicting the advantages of automatic heat.

At left and right are scenes taken during the heating exhibit which Mr. Tull describes. The exhibit was a part of the extra merchandising effort put forth to quicken interest in automatic heating

Our aim was to arouse public interest to the state where sales prospects would be in a receptive frame of mind when interviewed by the salesmen. Our success was even greater than we anticipated, especially so in view of the unseasonable weather.

We believe our Philadelphia experience has demonstrated clearly the possibilities of aggressive campaigning, and offers conclusive proof that there is money in family purses for good products when manufacturers and dealers unite to go after business agressively.

Exterior view of the exhibit, with sign that drew people in to view it

Heating *in* Residences *and* Small Structures

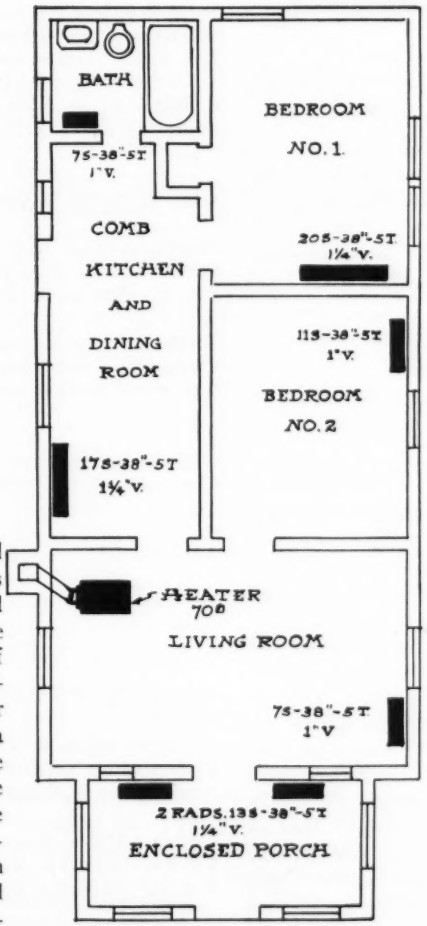


Fig. 5

The third article in H. L. ALT'S study of modern heating demands

How to Calculate Radiation by Btu. Method

IN calculating by the Btu. method the factors for the various types of construction are developed from coefficients which represent the Btu. transmitted per square foot of surface per degree temperature difference per hour. The Btu.—or British thermal unit—is simply a unit of heat measurement and is the quantity of heat required to raise one pound of water one degree Fahrenheit. Probably the most complete list of coefficients from which the factors may be developed will be found in the Guide of the American Society of Heating and Ventilating Engineers, although many other handbooks give the more common coefficients or the factors developed from these coefficients.

The coefficient given for ordinary frame construction with clapboards on the outside and wood lath and plaster on the inside is 0.262 and, with a temperature of zero outside and 70 deg. Fahr. inside, the temperature difference is 70 — 0, or 70 degrees. Therefore the factor for this type of construction with a 70 degree difference will be

$$0.262 \times 70, \text{ or } 18.34$$

which will be called 20 to allow a small contingency allowance. With glass the coefficient for a single thick window is 1.13 and this gives a factor for 70 degrees temperature difference of

$$1.13 \times 70, \text{ or } 79.1$$

but the customary practice is to only use the first decimal place, which gives

$$1.1 \times 70, \text{ or } 77$$

and this is the factor commonly used. Many calculators, who desired to figure close, formerly used only 70 instead of 77, but this practice seems to be dying out, as it really is incorrect.

The factor for a lath and plaster ceiling is not based on a 70 degree temperature difference, as the space above the ceiling assumes a temperature approximately half way between the room temperature at the ceiling and the outside temperature. If we assume that our room temperature at the ceiling is, say, 75 deg. Fahr. and the outside is zero, then the temperature of the furred space above the ceiling will approximate

$(75 - 0) / 2$, or $37\frac{1}{2}$ deg. Fahr.

Under this condition, if the ceiling coefficient for lath and plaster is 0.50, then the ceiling factor will be

$0.50 \times 37\frac{1}{2}$, or 19 (almost)

and we will use 20 for safety. The floor coefficient for one thickness of boards is 0.44, but the floor temperature will not be as high as the ceiling, so if we assume that the floor is at about 65 deg. Fahr. then the temperature difference between the room and the enclosed space under the room is

$(65 - 0) / 2$, or $32\frac{1}{2}$ deg. Fahr.

and our factor will be

$0.44 \times 32\frac{1}{2}$, or 14.3

and we will use 15 for safety.

How to Figure Air Changes with Btu. Method

In calculating the air change, the same method will be followed as with the 2-20-200 rule; that is, we will use one air change with windows in one exposed wall, two air changes with windows in two exposed walls and three air changes with windows in three exposed walls. The cubic feet of contents is then multiplied by the temperature rise (70 degrees) and is divided by 55 (the quantity of air in cubic feet which 1 Btu. will raise one degree) to find the number of Btu. which will be required for leakage or air change. There also is another method of computing the amount of leakage, which consists of using the amount of leakage air coming in around the cracks of the window, the lineal feet of crackage being measured around the outside of the sash and across the meeting rail in the center. This method requires so many assumptions to be made, such as the width of the crack, the probable wind velocity and the amount of air which will enter under the conditions assumed, that its value seems to be somewhat questionable. Moreover a change in the form of window will entirely upset the figures. Therefore in this discussion the matter of leakage will be considered on the air change basis only.

As one Btu. will heat 55 cubic feet of air one degree Fahr., the number of Btu. required to heat 1 cu. ft. of air from zero to 70 deg. Fahr. will be

70/55, or 1.27 Btu.

We are now ready to calculate the same rooms by the Btu. method which is given in the following:

Bedroom No. 1

E. Wall—75 sq. ft. x 20	1500	
Glass—15 sq. ft. x 77	1155	
	2655	
Addition for E. Exposure 10%	265	2920
S. Wall—87 sq. ft. x 20	1740	
Glass—30 sq. ft. x 77	2310	
	4050	
Addition for S. Exposure	0000	4050
Ceiling—117 sq. ft. x 20	2340	
Floor—117 sq. ft. x 15	1755	
2 A. C.—1053 x 2 x 1.27	2674	6769
Total Btu. loss for room		13739
Efficiency of radiation		150
Hot water surface required		91½ sq. ft.

Bedroom No. 2

S. Wall—93 sq. ft. x 20	1860	
Glass—15 sq. ft. x 77	1155	
	3015	
Addition for S. Exposure	0000	3015
Ceiling—104 sq. ft. x 20	2080	
Floor—104 sq. ft. x 15	1560	
1 A. C.—936 cu. ft. x 1.27	1189	4829
Total Btu. loss for room		7844
Efficiency of radiation		150
Hot water surface required		52¼ sq. ft.

Living Room

S. Wall—84 sq. ft. x 20	1680	
Glass—15 sq. ft. x 77	1155	
	2835	
Addition for S. Exposure	0000	2835
W. Wall—54 sq. ft. x 20	1080	
Glass—None	0000	
	1080	
Addition for W. Exposure 20%	216	1296
N. Wall—84 sq. ft. x 20	1680	
Glass—15 sq. ft. x 77	1155	
Addition for N. Exposure 25%	709	3544
Ceiling—170 x 20	3400	
Floor—170 x 15	2550	
2 A. C.—1530 x 2 x 1.27	3886	9836
Total Btu. loss for room		17511
Efficiency of radiation		150
Hot water surface required		116 sq. ft.

Enclosed Porch

S. Wall—39 sq. ft. x 20	780	
Glass—15 sq. ft. x 77	1155	
	1935	
Addition for S. Exposure	000	1935
W. Wall—79 x 20	1580	
Glass—51 x 77	3927	
	5507	

Addition for W. Exposure 20%	1101	6608
N. Wall—39 x 20	780	
Glass—15 x 77	1155	
	1935	
Addition for N. Exposure 25%	484	2419
Ceiling—75 x 20	1500	
Floor—75 x 15	1125	
3 A. C.—675 x 3 x 1.27	2571	5196
Total Btu. loss for room		16158
Efficiency of radiation		150
Hot water surface required		108 sq. ft.

Combination Dining Room and Kitchen

N. Wall—131 x 20	2620	
Glass—40 x 77	3080	
	5700	
Addition for N. Exposure 25%	1425	7125
Ceiling—124 x 20	2480	
Floor—124 x 15	1860	
1 A. C.—1116 x 1.27	1417	5757
Total Btu. loss for room		12882
Efficiency of radiation		150
Hot water surface required		85¾ sq. ft.

Bath

E. Wall—72 x 20	1440	
Glass—None	0000	
	1440	
Addition for E. Exposure 10%	144	1584
N. Wall—46 x 20	920	
Glass—8 x 77	616	
	1536	
Addition for N. Exposure 25%	384	1920
Ceiling—42 x 20	840	
Floor—42 x 15	630	
1 A. C.—378 x 1.27	480	1950
Total Btu. loss for one room		5454
Radiator efficiency		150
Hot water surface required		36¼ sq. ft.

For the more common types of construction as employed on small buildings the factors shown in Table II may prove of use. These are for a temperature difference of 70 deg. Fahr. but may be modified for any other temperature rise by dividing by 70 and multiplying by the temperature rise desired.

In using the decimal factor method the same wall, glass, ceiling and floor areas are used and these are multiplied by the decimal obtained by dividing the actual loss of the construction in Btu. per sq. ft. by the radiator efficiency in Btu. per sq. ft., as previously explained. As this method produces almost identical results as are obtained with the Btu. method, it only will be necessary to show the calculations for one room here, as a typical example, the other rooms being handled in the same manner.

Calculating Heat Losses by the Decimal Factor Method

The calculations for Bedroom No. 1 for instance would be as follows:

TABLE II

HEAT LOSS FACTORS FOR COMMON TYPES OF CONSTRUCTION

(In Btu. per sq. ft. per hr. for 70 Fahr. Temp. difference)

	Plastered Inside No Furring	Plastered and Furred Inside
Brick Wall		
8-in. thick	25	17
12-in. thick	20	15
16-in. thick	16	13
Terra Cotta Block Wall, Stucco Outside		
8-in. block	21	16
10-in. block	20	15
12-in. block	16	13
16-in. block	13	11
Terra Cotta Block, with 4-in. Brick Veneer Outside		
6-in. block	18	14
8-in. block	17	13
10-in. block	16	12
12-in. block	15	11
***Concrete Blocks,** Plain on Outside or Stuccoed		
8-in. concrete block	29	20
12-in. concrete block	22	16
8-in. cinder block	20	15
12-in. cinder block	15	11

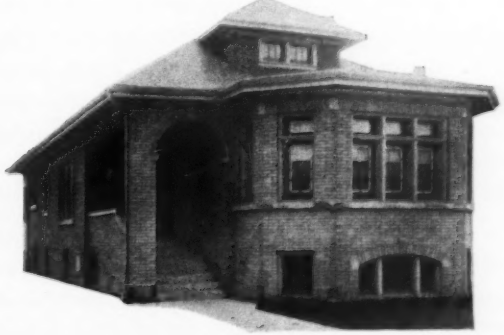
* Hollow blocks of cinder concrete or regular concrete as noted.

Frame Construction, with Clapboards, Shingles or Stucco		
4-in. stud walls	20	..
Or with 4-in. brick veneer	..	17
Floors, Ceilings and Roofs		
1-in. pine on wood joists with no ceiling below	30	
1-in. pine on wood joists with lath and plaster ceiling below	19	
½-in. hardwood floor on 1-in. underfloor, no ceiling below	23	
½-in. hardwood floor on 1-in. underfloor with plaster ceiling below	16	
Lath and plaster ceiling with no floor above	35	
4-in. concrete floor on ground at 50 deg. Fahr.	11	
6-in. concrete floor on ground at 50 deg. Fahr.	10	
4-in. concrete slab on ground at 50 deg., with 1-in. wood floor	8	
6-in. concrete slab on ground at 50 deg., with 1-in. wood floor	7	
Roof, frame, with wood shingles	33	
Roof, frame, with asphalt or asbestos shingles	35	
Roof, frame, with slate or tile	37	
Windows, doors, etc., with single glass or thin wood panels	77	

Bedroom No. 1

E. Wall—75 sq. ft. x 0.083 ..... 6.22 (See Note A)

(Continued on Page 144)



Editorials

Four Billion Dollars

WE must have permitted our dreams of large volume to upset common sense to a great degree if the estimate of four billions of dollars' worth of construction during the next twelve months does not awaken a thrill of hope.

It is true that the sum is one-third lower than when we were going through six-billion-dollar years. But all of the six billion was not entirely satisfactory, and the amount of frozen mortgage money today would indicate that it was not—as we now know it was not—a healthy total.

However you look at four billion dollars, and at that part of it—running probably over five hundred million—which will be spent for plumbing and heating, you are looking at large sums of money. It would most certainly be enough for an industry that had set its house in order.

Along with a number of other industries, ours stands self-confessed to malpractices. The setting up of the trade practice rules amounted to just such a confession. No man, hoping for better times, looking forward to the steady but probably slow increase in volume, and at all interested in the welfare of his industry, can help feeling a sense of irritation that there is still obstinate resistance to an orderly settlement of the industry's problems.

Go into the field. Listen to the talk of men who represent manufacturers, to the talk of wholesalers, and to the talk of contractors. Where there are so many complaints there must be some ground for them.

Practical men do not, of course, look for the millennium. But when one hears reports of conditions in various communities and realizes that shortsighted men are actually stirring up controversy, to their own disadvantage, it does seem that Hamlet was right when he said "the times are out of joint." It just doesn't make sense when, let us say, a wholesaler who professes to hold by the established channels of distribution, short-circuits that distribution.

We are moving into better conditions in the building field. Whether it takes one year, or two, is beside the point—sooner or later we shall have a volume of new construction with us again. And the big question the plumbing and heating industry has to solve is this: Are we going to give away all of the advantage of specialized knowledge and skill, and, by our internal dissension, work to the profit of buyers who have their own skill at playing off one man, or set of men, against another?

Business men must come to realize, and that very soon, that by every act of business anarchy they invite the government to intervene. In carrying their troubles to the Federal Trade Commission, business men have already taken a long step in that direction. There is still time to keep the trade practice movement an advisory one. If normal competition curdles, there will not be anything voluntary about federal control—and there are plenty of radically minded men in this country who believe that government ownership is something to be prayed for. They will take advantage of chaos to push their views.

We urge the leaders of the industry, therefore, in the face of the volume estimated for the coming twelve months, and in the face of the fact that it will not be very long before new construction totals will climb, to bend their efforts to eliminate unhealthy practices. This does not mean that leaders need take the burdens of the industry on their own shoulders. They will do much if the branches they represent are set in order. They have, then, an instrument to whip the obstinate into line.

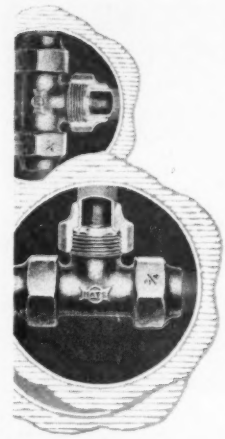
Mending Fences

IT is a long time since that phrase, "mending fences," was used to indicate the activities of gentlemen in office, who returned home to make sure that there were no breaches in the affection of their constituents.

This is a time for contractors of every type to be "mending fences." Relentlessly the march of time is creating demands for new housing facilities, for new office and industrial space. A year, or two, and we shall see new construction growing.

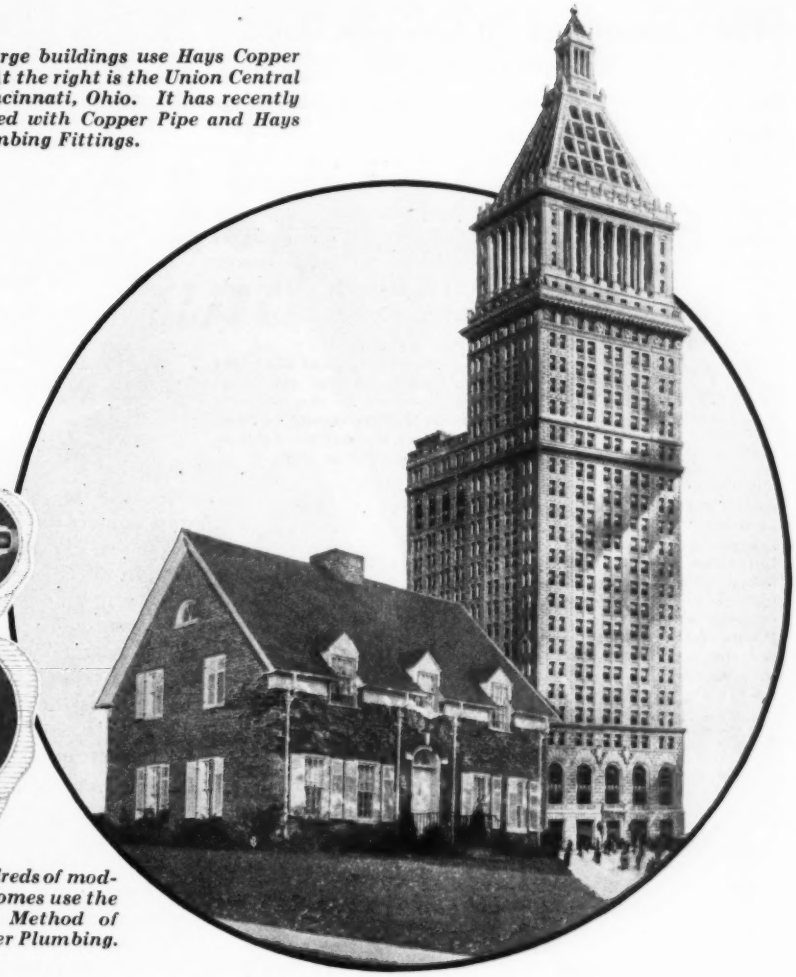
Now is the time for the contractor to get into contact with those who will have such jobs to let. Architects, general contractors, real estate agents, prospective home or apartment owners—all these should now be receiving personal attention. Contractors should be renewing contacts, re-stating their qualifications for the type of job they know how to do, getting on a firmer footing with the men with whom they will be dealing later.

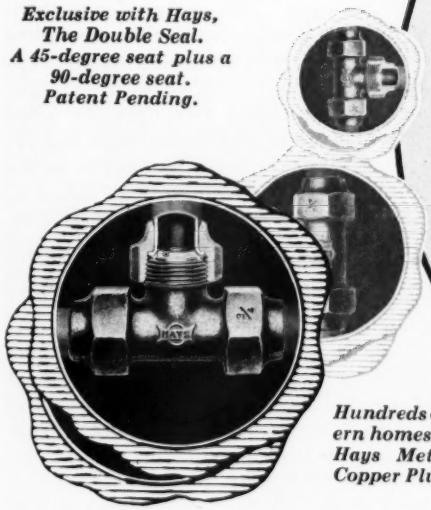
It's one time when a business man may safely take a leaf out of the notebook of the politician.



Exclusive with Hays, The Double Seal. A 45-degree seat plus a 90-degree seat. Patent Pending.

Scores of large buildings use Hays Copper Fittings. At the right is the Union Central Bldg. of Cincinnati, Ohio. It has recently been re-piped with Copper Pipe and Hays Copper Plumbing Fittings.





Hundreds of modern homes use the Hays Method of Copper Plumbing.

It Had To Be Good To Go Into Buildings and Homes Like These

When you bid on the plumbing for fine homes and buildings you know that the installation must be neat, trouble-proof and permanent. The Hays Method of Copper Plumbing will enable you to meet these requirements with a saving over other permanent methods. The Hays Double Seal Copper Connection can be your entering wedge into the field of fine plumbing.

Theoretically, we knew the Hays Double Seal Connection to be the strongest copper connection. To prove it beyond a shadow of doubt a party interested in copper plumbing asked an eastern university to "give it the works" in their laboratories.

If you ever doubted the strength of the Hays Connection or the effectiveness of the Double Seal, these test results will convince you. It would be extremely valuable to have this report to show prospective customers. We'll be glad to send you a copy along with a cut away sample fitting and our catalog. Write for them today.

HAYS
DOUBLE SEAL
CONNECTIONS

HAYS MANUFACTURING CO., Erie, Pa.

The Owner Said "It Can't Be Done!"

(Continued from Page 38)

the person to stand in the center of the compartment especially where there are side showers in addition to the head spray. This means that in many stalls, he stands directly over the drain. To avoid this, Mr. Kuenzli makes it a practice to place the drain off-center in the direction of the head spray. The result is that the drain is now located between the head shower and the user which is as it should be logically. The side sprays were located on the front and rear walls of the compartment. There are four in all. The two on the rear wall are at heights of 13 and 39 in. above the floor. The front wall sprays are located at heights of 26 and 52 in. above the floor. A cross section of the shower stall through the sprays shows them staggered.

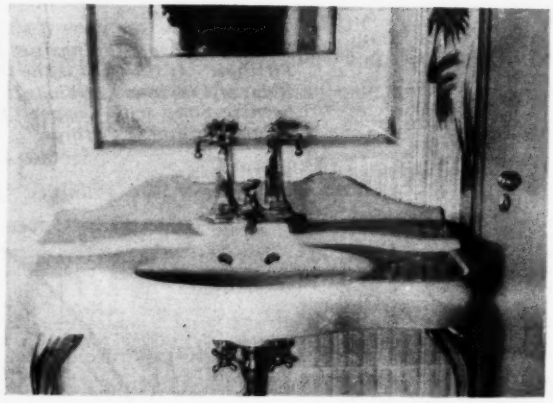
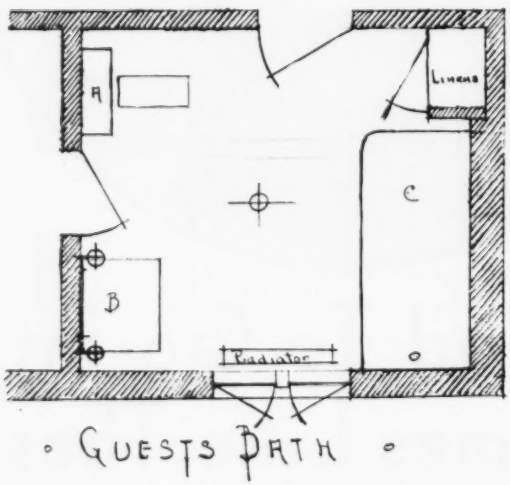


Fig. 10—The view at the right is a photograph of the lavatory installed in the master's bathroom. This should be compared with the left hand drawing shown in Fig. 4

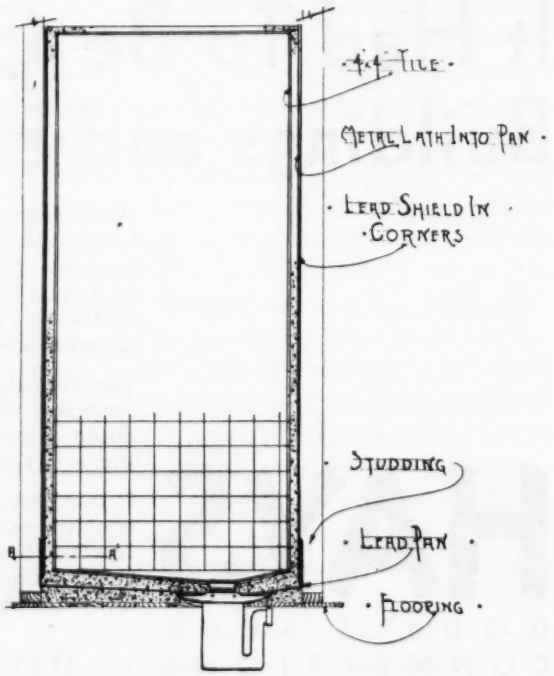
Fig. 9—The drawing below shows the plan of the guest's bathroom, the dominant color scheme of which was made red. The view in Fig. 6 was taken with the camera pointing through the upper door opening and the view in Fig. 7 was taken with the camera pointing through the door opening at the left



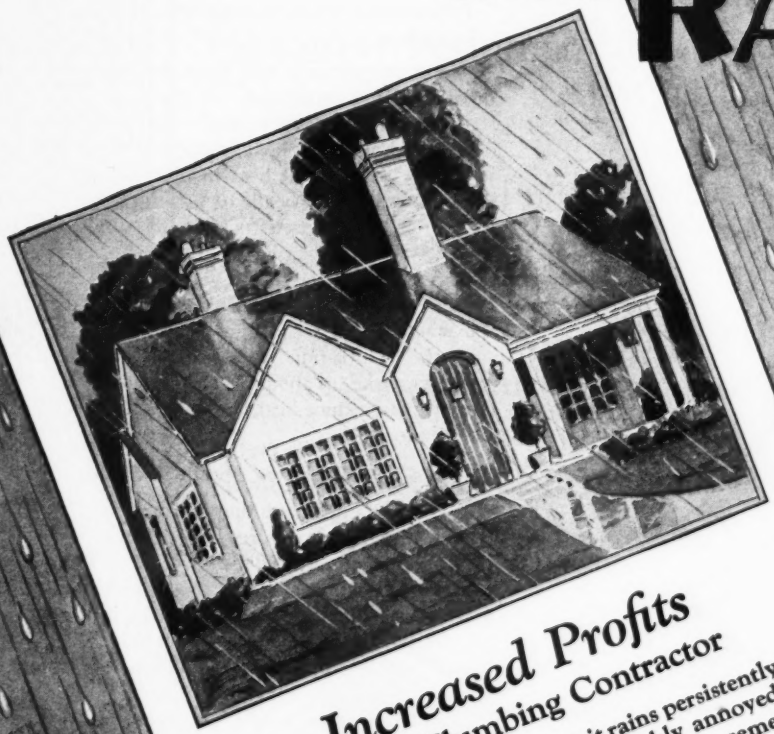
The first layer of concrete poured on the floor is pitched toward the drain from all directions. When this is dried, it is given a coating of asphaltic material which serves both as a cushion and a means of filling out any irregularities in the concrete. Next, a lead pan receptacle is formed in the manner shown in Fig. 12. The lead sheet is larger than the area of the floor by 16 in., both ways. This allows for a turn-up of 8 in. on all sides. To make this pan without soldered corner joints and without cutting Vees from the corners, two opposite sides are turned up a height of 8 in. The remaining two opposite sides are turned up a similar amount which results in having triangular corners stick out. These are called pig's ears. The metal is pressed together flat and then is turned back against one of the sides. After the pan is formed, the practice is to coat the bottom of it with asphaltic material similar to that used on the concrete. It is then fastened to the floor drain.

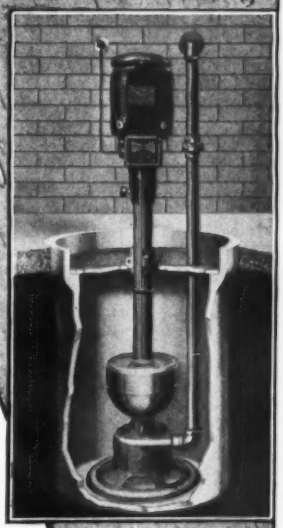
Fig. 11—The drawing at the right shows the details through a cross section of the shower stall constructed in the master's bathroom. The main feature of this is in the waterproofing. Note the construction of the corners where lead shields were installed to deflect any water into the floor pan which might seep through the corner cracks

The next detail consists of waterproofing the corners of the stall and is what this contractor considers makes the job better than the ordinary. He uses four sheets of lead, each of which are 12 in. wide and as long as the stall is high. He bends these lengthwise so as to make an angle having legs 6 in. long and then fits them into the work, placing one in each corner. It is important that the lead corners should



when it RAINS and RAINS and RAINS





Penberthy Automatic Electric Sump Pump

Increased Profits for the Plumbing Contractor

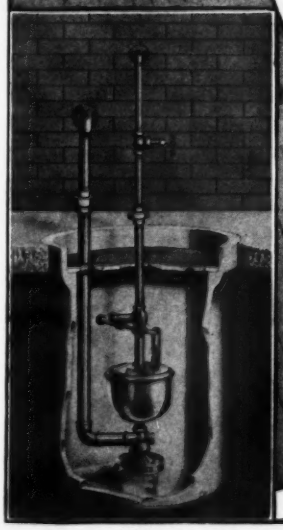
THIS is the time of year when it rains persistently, and many home owners are considerably annoyed with wet basements. The suggestion of a timely remedy for such a condition will bring the plumbing contractor many profitable jobs.

The effective remedy is a Penberthy Pump . . . either an automatic electric unit, or an automatic water operated unit, depending upon the conditions. Both types carry an attractive profit. Either one is easy to install, and profits will not be dissipated through servicing . . . because Penberthy Pumps are reliable and free from operating troubles. Being constructed entirely of copper and bronze, they are immune to corrosion.

Penberthy Pumps are carried in stock by leading jobbers everywhere.

PENBERTHY INJECTOR COMPANY
DETROIT
Canadian Plant Windsor, Ont.
Established in 1896

Penberthy Automatic Cellar Drainer (Water Operated)



PENBERTHY PUMPS PREVENT FLOODED BASEMENTS

PENBERTHY PRODUCTS

extend from the top of the shower stall to below the top of the lead pan on the inside of the pan. This is so that if the joints in the tile should crack, and if the water should seep into the lead corners, it will be deflected down and carried into the pan where, in turn, it is carried to the weep holes in the floor drain. If the corners are not carried below the top of the

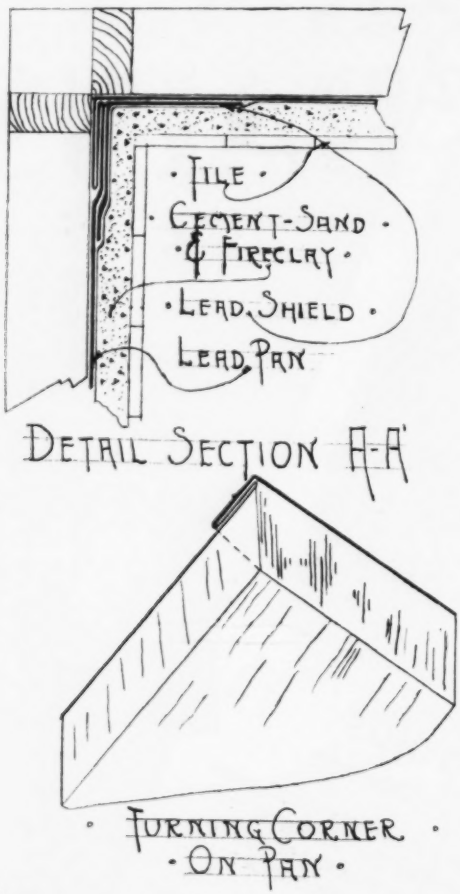


Fig. 12—These details show the construction of the lead pan and corner shields. Note that the corner shield is dropped on the inside of the floor pan. The pig's-ear corner construction of the lead pan makes an absolutely water-tight joint without the necessity of soldering

pan and inside of it, the water will not be deflected to the drain and they will be of no use. Another item which is given consideration by Mr. Kuenzli is that of having the plastering contractor drop his metal lath below the top of the lead pan and inside of it. In this way the solid cement plaster and tile wall is unbroken and any seepage water is deflected into the floor pan and thus into the drain.

A third coating of asphaltic material is applied, this time to the upper surface of the lead pan in place. Mr. Kuenzli has found one very important item is to see that the weep holes in the drain are not clogged before the strainer is set in place. If this precaution is not taken, of course, foreign matter such as concrete or asphaltic paint may hold the water back.

How Heat Losses May Be Reduced

Cutting Down Heat Loss

IT IS not difficult to find examples of heat being wasted because of improper design or construction. A building loses heat in two ways, by transmission losses through the building materials, that is through the walls, glass, and roof, or by the infiltration of cold outdoor air which causes the loss of an equal volume of warm air from the building. In a large office building, these losses are divided about as follows:

Transmission losses through walls and roof	30%
Transmission losses through window glass	40%
Infiltration losses	30%

These proportions will vary, of course, according to the type of construction. If the building is well constructed and has thick walls—as ordinarily found in office buildings—the heat transmission through the walls is usually so low that heat insulation cannot be economically justified. For walls of lesser quality and for roofs, insulation can be used to good advantage. If the walls are built of hollow tile, the tiles should be laid so that air circulation through the wall is prevented as much as possible. The infiltration losses occur mainly around the windows. Of the total heat losses from the building, the infiltration and transmission losses through windows make up about 70 per cent. It would seem that the effort to reduce heat losses should be concentrated on the windows.

Windows Should Be Tight

It is most important that the windows selected be of the very best quality as regards tightness. This refers to leakage through the frame as well as around the sash. Some double-hung metal sash windows have been particularly bad offenders with respect to infiltration through the frame. In other cases, infiltration through pivoted metal sash windows has been high. The argument is sometimes advanced that it is undesirable to have tightly fitting windows because fresh air is needed for ventilation. The answer is that if ventilation is needed it is better to be able to control the amount rather than to have leakage go on day and night in an uncontrollable fashion even when the building is not in use.

Ventilation Necessary. Open Windows Instead of Cracks May Provide Positive Control

If no ventilating system is installed, windows can be opened slightly if necessary, although even with tight windows there are usually enough air changes except for crowded offices. In some buildings, inferior windows have been installed to reduce the first cost. This is the poorest kind of economy. It results in difficulty in heating, drafts from windows, complaints from building occupants, and high steam consumption.

The windows should always be equipped with the best weatherstripping available. It has been previously stated that the infiltration losses in an office building amount to about 30 per cent of the total losses. This approximation is based on non-weatherstripped metal windows. Weatherstripping the windows probably reduces the infiltration by nearly 60 per cent, thus reducing the total heat loss from the building by over 15 per cent.

AUTOMATIC HEAT

A new editorial service for the growing number of heating dealers who are bringing higher standards of comfort and convenience to the American home

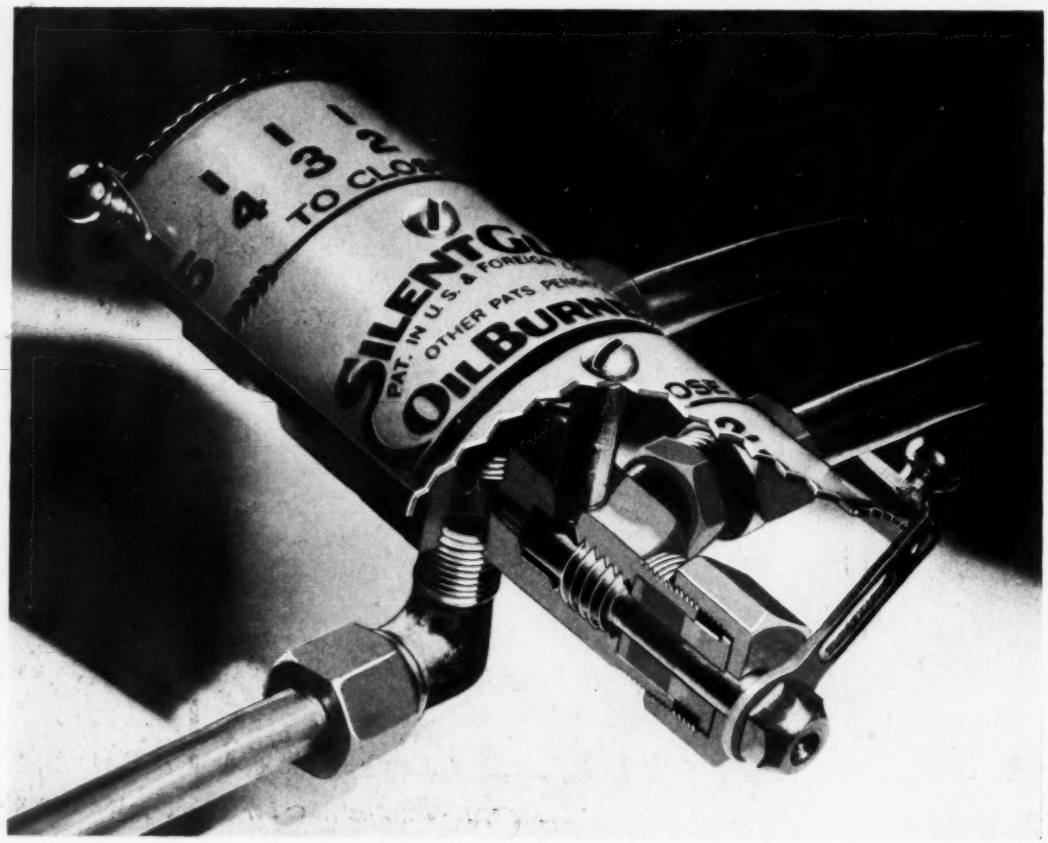
In this Issue:

Oil Burner Performance Records Make for Accurate Estimates

Selling Satisfaction with Gas Heat

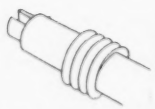
Automatic Heat for Modest Homes

How a Heating Contractor Sells Stokers



Cut-away section of exclusive Silent Glow Microfeed Valves showing the screw and thread which make the valves capable of adjustment to a thousandth of an inch. No other range burner has valves which can be regulated to so concise a degree.

MICROFEED VALVES
AN EXCLUSIVE SILENT GLOW FEATURE



The Microfeed valve, designed and perfected by Silent Glow Engineers is an exclusive, patented feature of Silent Glow Range Burners.

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Oil Burner Performance Records Make for Accurate Estimates

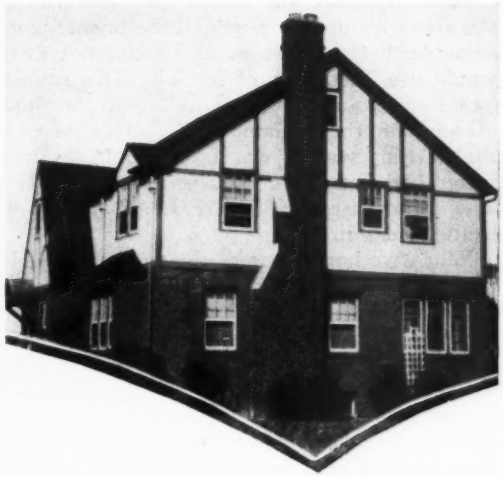


Fig. 1—Between two and one-half and three gallons of oil are required per sq. ft. of radiation per season

By J. K. STONER

who tells how he checked the Fuel Oil Consumption Recommendations published by DOMESTIC ENGINEERING *in May, against his actual operating records and found them to agree exactly.*

IN estimating the fuel oil consumption on domestic and industrial oil burners it is necessary to calculate a number of factors other than the capacity of the boiler and type of burner to be used.

Before most owners will agree to have an oil burner installed they desire to know about how much oil will be consumed per heating season and if the contractor wishes to keep satisfied customers, his estimates should run very close to the actual consumption.

Before a fairly accurate estimate can be had, a study must be made of the type of house into which the burner is to be placed; the exposed surface must be noted and the location of the house should be given consideration. For instance, if a room is exposed to the northwest and is heated by a long run from the boiler situated in the southeast corner of the basement, this room should be harder to heat than if the boiler were closer to the room, assuming that the northwest room is exposed to the coldest winds.

When we started oil burner work we made a very close study of our first installations and then based all other estimates on the performance of these first jobs, allowing for the variations in exposed surface and the condition of the system in which the burner was to be installed. The first installations showed the following:

Type of System	Sq. Ft. of Rad.	Gals. of oil consumed per heating season	Gals. of oil used per sq. ft.
Hot Water	1200	*2500 to 2700	2¼
Vapor	1000	3500	3½
Vapor	800	2000	2½
Vapor	2000	6000	3
Hot Water	550	*1400 to 1500	2 8/11
Hot Water	750	2000	2⅔
Hot Water	900	2500	2 7/9
Total	7200	Max. 20200	2.8

*Owner had some oil in tank before refilling and was not certain of the exact amount consumed.

Note—Gallons of oil are shown in round numbers to facilitate figuring.

The actual consumption of these installations show that it takes between two and one-half and three gallons to heat one square foot of radiation per heating season. Recently we installed a burner in an office building. There were 5,000 sq. ft. of radiation in the remodeled building. Using the data derived from former installations, he concluded that if one square foot of radiation can be heated by 3 gals. of oil (the maximum gallons was used due to height of building and window exposure), 5,000 sq. ft. can be heated by 15,000 gallons of oil. The actual consumption was 15,964 gals., the over consumption being due to one week of bad weather which was more severe than average for this part of the country. The fourth floor of this building is used mostly for designing rooms where the men work in their shirt sleeves and where the temperature is always between 75 and 80 deg. Fahr.

The fact that some people keep their house warmer than others must be kept in mind. Several of our installations are in homes of people who are rather old and they always keep their house at a higher temperature than other folks, thus consuming more oil.

Last season we installed an oil burner in a hot water heating system containing about 800 sq. ft. of

radiation. Before the owner gave out the contract she asked about how much oil the burner would consume per heating season. Our estimate was that she would use 2,000 gals. of fuel oil. This estimate was based on two and one-half gallons to the square foot of radiation, the minimum gallons being used because the heating system was in good shape and a new boiler had been just installed the previous season. The owner used 1,985 gals. of oil during the past heating season.

When we have some doubt as to the reliability of our estimate, we make it slightly higher than our formula would show. By doing this the owner is satisfied if his oil consumption runs about what the contractor estimates and more than pleased if it runs under the estimate.

The grade of fuel oil used often changes the estimated consumption but since most of our installations require number three grade fuel oil, we do not have to make any allowance for this. In fact, records show that the majority of domestic oil burners recommend number three grade fuel oil.

We have no formula for making these different allowances, but we rely on the performance of past installations and our experience with heating engineering to adjust our estimates to suit the occasion.

By taking the scales and charts given by H. T. Hall in his article "Coal? Oil? or Gas?" appearing in DOMESTIC ENGINEERING, May 30, 1931, and following his instructions, we have checked actual situations against his method of estimating by showing the results of both scales.

Our records show a specific example where the comparative amounts of coal and oil could be figured. This particular case is a hot water system formerly heated by what is termed on Mr. Hall's chart as "Good Bituminous Coal" (15000 B.t.u.'s purchased per ton).

We were able to interest the owner in an automatic oil burner and finally he consented to have it installed, estimating that he would use about 2,700 gals. of oil. This estimate was based on our formula of 3 gals. to the square foot of radiation, the house having 900 sq. ft. of radiation.

By using Mr. Hall's table we compared the heating value of the two fuels; however, the heating efficiency of both are approximated. He recommends a heating efficiency of 50 percent in residences since the coal fire is not given perfect attention and may be more or less irregular. The oil decided upon for consumption was termed "Light Oil" (28°-31°) and its heating efficiency was placed at 80 percent since the installation was automatic in every respect. However, Mr. Hall recommends only 70 percent for oil heating efficiency. After making the necessary calculations we arrived at the following conclusion:

135 gallons of light oil equal 1 ton of good bituminous coal.

135 gallons x 20 tons (coal actually consumed) equal 2,700 gallons.

The actual consumption of oil for the past heating season was 2,700 gals., this amount checking with both methods of computation. The amount of variables in the contractor's original scheme are numerous and hard to estimate as is the heating efficiency per cent in the other article, however, by basing both on past performances, the contractor knows just about how much to allow in each case.

Fig. 2—There are many variables involved in estimating the probable fuel oil consumption

Comment by H. T. Hall

The calculations made by the author of the above have proved out to be correct by actual trial so that he must be making estimates pretty close to what they ought to be. The use of 80 per cent for a complete automatic oil job and coming out right on it simply indicates that the charts referred to represented the equivalent oil under presumably exactly similar conditions; that is if the coal installation is a non-automatic one and the oil installation is similarly non-automatic the percentages of efficiency ought to be pretty near right; these percentages—by the way—are seasonal percentages and are lower than can be obtained on a test.

As we see the matter, raising the percentage of efficiency on the oil from 70 per cent recommended to 80 per cent simply happened to compensate for the more economical conditions secured with a complete automatic oil installation. However, as the author states, there are so many variables entering into a change in fuel, especially from a solid fuel to a liquid one, that to obtain an accurate result requires considerable skill combined with good judgment. It will be noted on the schedule quoted in the article that there is a variation of oil consumption on vapor jobs from 3½ gal. per sq. ft. to 2½ gal. per sq. ft. per season which indicates a variation of 40 per cent right in the oil portion without considering coal at all. This is a very considerable variation in estimating.

As long as such wide ranges exist—and they probably will continue from one cause or another—just so long will accurate estimates of oil consumption be approximations and only approximations. It is very pleasing, however, to have the actual tests prove that the chart given in the original article works out so closely in practice but care must be exercised in comparing installations to allow for changing methods of control.

The chimney at the right illustrates an example of good construction in overcoming the possibility of down-drafts as far as height is concerned

This article continues the discussion of the various features about an installation which it is necessary to know when

Selling Satisfaction *with* Gas Heat

By THOMSON KING

WE cannot have automatic heating without some form of thermostat. The boiler is the heart, the piping the arteries and veins, the steam or water is the blood and the thermostat is the brain, the control of them all. It is, therefore, of vital importance that we should select the proper thermostat to place on each particular job, and almost equally important that it should be placed at the best possible point in the house.

The first choice that confronts us is whether to recommend the clock or the plain type. Much has been written and more said on this very debatable subject against the use of the clock type thermostat. The function of the clock is to set back the temperature at night about the time the family retires, and to bring it back to 70 deg. Fahr. in the early morning so that the house may be comfortable when they get up. The set-back can, of course, also be used if the members of the family are away from the house for any considerable length of time during the day.

It is certain that this ability to set back the temperature 10 or 15 degrees at night, or at other times during the period when bedroom windows are usually open, and when a temperature of 55 deg. Fahr. is all that is needed in the house, will save a certain amount of fuel.

The serious question is, how much will it save, and how much must it save to justify the greater first cost and the possibility of service calls that is involved by the use of the clock.

A number of tests have been conducted to determine what the real saving amounts to when the night set back is used. I believe that the best conclusion we can draw from these tests is that there should be a saving in the case of gas fuel of at least 7½ per cent and that this saving may reach but will seldom exceed 15 per cent of the fuel as compared with the same installation without temperature set-back. The figures quoted above are for residences operating under average normal conditions. We can easily picture conditions where the saving due to set-back may be greater than the maximum figure given. In the case of a business house where very little heat is required after 6 p. m. or before 9 a. m. or in the case of a residence where there are no children and both husband and wife are employed, the set-back becomes more valuable than for the conditions we find in the average residence.

From the foregoing I think we may conclude that on practically all gas heating installations we should have thermostatic control, and that the thermostat should be equipped with a clock, in order to obtain the saving due to set-back. The exception to this statement would be where the set-back period would be very short, or where the degree of set-back would be small, such as cases where the family always sit up very late, or they desire to have the house at or around 70 deg. Fahr. all night on account of sickness or some other peculiar condition. Also there is the case where natural gas is available at a very low rate, and where the main value of a saving due to set-back is consequently smaller in comparison to the first cost of the clock and the possibility of trouble with it.

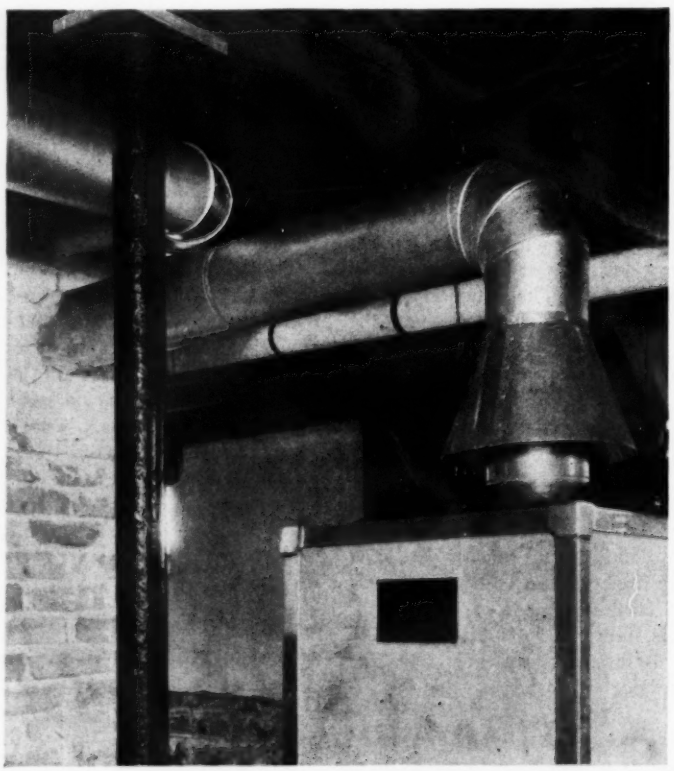
Whenever the clock is employed there is some chance of service trouble. People let them run down and when they start them up they sometimes get the time cycles reversed, causing the house to be cold during the day and warm during the night, and requiring a service call to set them right again.

A very interesting development which will have an important bearing on this subject and which will make automatic heating still more automatic and more popular

than it is at present is the production of thermostats equipped with electric clocks, these clocks being driven by synchronous motors that never require winding.

The selection of the very best place to locate the thermostat often presents a really difficult problem calling for a very careful analysis of the advantages and disadvantages of the various possible locations, and for a wide fund of experience as to what constitutes the ideal location. The following simple rules should be observed and will go far toward securing lasting satisfaction from the heating plant. A thermostat should always be on an inside wall. It should not be close to any radiator. If it is it will close off before the rest of the room is comfortable. It should not be at any point where it can receive heat from a chimney flue, from the kitchen or any other heat source that does not affect the rest of the house. It must never be subject to drafts from any door that is open frequently. It must not be pocketed so that the air cannot circulate freely around it, and it must be at a point easily accessible, and where the temperature is typical of the parts of the house that are being used most actively.

It is often extremely difficult to find any location that satisfies all these requirements and sometimes it is necessary to look ahead and foresee developments that may arise in the future. I recall a case where a thermostat was located on a thin wall between the dining room and pantry. When the house was occupied, there were very soon complaints that the gas heating was unsatisfactory and the house could not be kept comfortable. Investigation showed that a household refrigerator had been placed against the wall in the pantry opposite the thermostat and that the heat from the motor and condensing coil of the refrigerator was being conducted through the wall and causing the thermostat to shut off before the rest of the house came to a comfortable temperature. We have seen complaints due to thermostats being behind doors or otherwise pocketed so that they did not get free air circulation. There have been almost countless complaints caused by various other improper locations which usually resulted in the statement that the fuel or the heating equipment was unsatisfactory because the house could not be kept at the temperature that the owner desired.



Although the gas boiler requires very little draft, it is absolutely necessary that the products of combustion be removed as quickly as they are formed. This only is possible with correct and adequate flue conditions

Cold Seventy and Over-Shooting

When we first began to use thermostats it seemed that human comfort could ask for very little more than what the thermostat was able to do, that is, to operate within a range of 1 deg. Fahr. either way from the temperature at which it was set. It took us some time to find out that in some cases this would not be enough and it took a considerably longer time to find out just what additional duties it would be called upon to perform.

We soon found that with automatic heat, when the thermostat had cut off the supply of fuel, when 70 deg. Fahr. was reached at the breathing line, there might be quite a long period before it would again call for heat due to the temperature having fallen a degree at the thermostat location. This was particularly true in mild weather. During the time that the boiler or furnace is cut off the air near the windows may become chilled and currents of cold air may begin to circulate along the floor before the temperature at the height of the thermostat is affected. This condition causes discomfort and complaints from the occupants of the house, although the thermostat is doing all that was originally expected of it and is bringing on the heat when the temperature at its location falls one degree. Under such conditions the occupants may touch the radiators and finding them cold often causes the investigator to feel cold himself.

One method of combating this condition is to make use of a device which can be installed to supplement the operation of the thermostat. This consists of a thermostatic element which can be placed either in the water circulation of the hot water system or may be clamped on a radiator of either a steam or hot water system. This is connected with the thermostat in such a manner that if the temperature of the radiator falls below, say, 100 deg. Fahr. the boiler is turned on whether the thermostat is calling for heat or not. The boiler will continue to generate heat until the temperature of the radiator, where the low limit control is installed, is raised, say, 10 degrees. This

Spencer Heating Exhibition in Philadelphia

SUCCESS

Here is Good News for everyone in the heating business; evidence that there *is* business; that people *can* be sold heating equipment today, despite "conditions." Spencer announced an Automatic Heating Exhibition in the city of Philadelphia, in September. Although the temperature was 97, hundreds of people came to see the display; so many that we had to call in extra salesmen from other territories. Heating contractors brought in their prospects, and our salesmen helped "close" them. Many sales were made as a direct result of the exhibition, which displayed the complete line of Spencer Boilers including the

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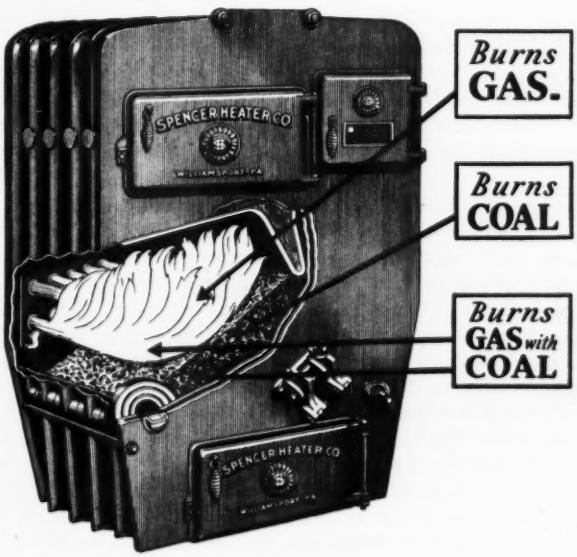

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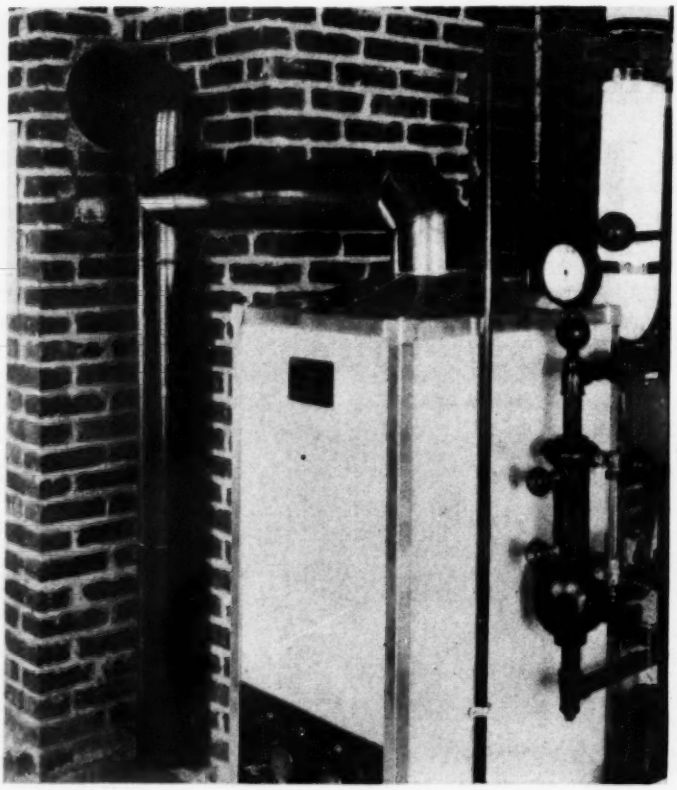
insures that the radiators never become dead cold and has been found most useful in overcoming cold-seventy complaints.

There is also a device to be attached to the thermostat, where the radiator control is used, which is known as a night switch and which will cut it out of control during the night set-back period. If this were not done, of course, it would bring the boiler on during the night when it was not needed. There is also a device which may be attached to the thermostat when this control is used which is very useful in mild weather. This is an extra contact on the regular thermostat which provides that if the operation of the radiator control causes the temperature to rise two degrees above the setting of the thermostat the boiler is cut off whether the radiator control is still calling for heat or not. This protects against excessive temperatures caused by the radiator control in mild weather.



Care should be taken to see that the flue pipe from the boiler is inserted into the lining of the chimney and tightly cemented where it enters so that the products of combustion may not find their way into the space between the lining and the brick of the chimney

Our experience has shown that cold-seventy is a very real complaint. We would strongly advise the use of controls wherever there is any chance of this complaint arising.

On steam and vapor installations the delivery of heat ceases almost immediately after the gas is turned off the boiler. In the case of hot water systems, this is not the case. There is a large amount of heat stored in the great mass of hot water that fills the radiators and pipes. Circulation continues and the temperature of the room may be carried several degrees above the temperature at which the thermostat is set. By the same token it takes a longer time to secure the delivery of heat into the rooms after the thermostat causes the boiler to be turned on when the temperature is falling. Experience shows that the result of this condition is that we can hold a more even and accurate temperature on steam and vapor than on hot water systems under thermostatic control.

Flue Lining and Chimneys

There are many people who have an idea that gas fired boilers do not require very much in the way of a chimney or flue and that almost anything will do. This is a very bad mistake. It is perfectly true that the gas boiler requires very little draft, as it is not necessary to draw the air for combustion through a bed of solid fuel as in the case of coal. It is, however, absolutely necessary that the products of combustion be removed from the combustion zone and eliminated through the flue and chimney as rapidly as they are formed, and this cannot be done unless flue conditions are correct.

The flue and chimney must be of adequate size. The flue must be free from ells, it should have a pitch rising toward the chimney and there should never be a very long run in the cellar if this possibly can be avoided. The flue temperatures in gas fired equipment are much lower than for coal and oil burning furnaces and we must reckon with the effect of condensation in the gas fired boiler.

When gas unites with air in the combustion process all the hydrogen in the gas burns to water vapor. This water vapor will condense when the products of combustion are cooled below their due point. In natural gas this condensation is nothing but distilled water, in manufactured gas there is a trace of sulphur in the gas which burns to sulphur dioxide. This coming into contact with the water of condensation produces a dilute sulphuric acid which attacks and corrodes some of the most commonly used flue pipe materials. The more efficient the boiler the lower the flue temperature we will have and the more condensation will occur. Therefore, we may expect much more condensation on a hot water boiler than in the case of steam boiler due to the fact that the steam boiler operates at a higher temperature and consequently discharges its flue gases at a higher temperature. On account of the corrosive action and of the effect of water, even where no sulphuric acid exists, it is important that the chimney should be lined and that the flue pipe should be made of some material that will not corrode or rust.

Where there is heavy condensation in the flue line or in the chimney it may be necessary to provide a drain to carry this off. This may be run through the sewer or it may simply be run into a pipe in the ground which is provided with a small space filled with sand or gravel so that it may drain easily into the earth. The pipe must, of course, be made of acid resisting material.

The chimney to which any gas heating appliance is connected should be lined and except in the cases of very old houses there are few chimneys that do not have linings. In such cases, however, there is the possibility that condensation from the products of combustion may soak through the soft brick or mortar of unlined chimneys and appear on the walls of the rooms, or in the case of an outside chimney on the outside of the house. It is, therefore, well to warn an owner of this possibility and advise that the chimney should be lined.

Chimneys need only be high enough to clear the level of the roof peak and adjoining houses so as to prevent back drafts. Height as a means of providing draft is not necessary as it is in cases of chimneys used for other fuels. Care should be taken to see that the flue line from the boiler is inserted into the lining of the chimney and tightly cemented where it enters so that the products of combustion may not find their way into the space between the lining and the common brick of the chimney.

◆

Gas Policy Good But Utilities Should Not Sell Merchandise

To the Editor:—

I am heartily in accord with the set of principles of the American Gas Association. I heard the discussion at the Milwaukee convention and was very glad to know that some master plumbers have been fortunate enough to make some money by co-operating with them. Will state, however, that the ideal situation would be for the utility companies to merchandise their commodity only, and give aid to the other merchants in selling appliances. If this can not be brought about, then the other is surely a fine substitute. So far we have had very little co-operation with the Gas Company.

I believe it is partly the master plumbers' fault and I am glad to know that we have the existing feeling between the two bodies and that the National Association is back of us in it.

(Signed) J. E. Lansdowne,
Wichita, Kan.

◆

Selling Stokers

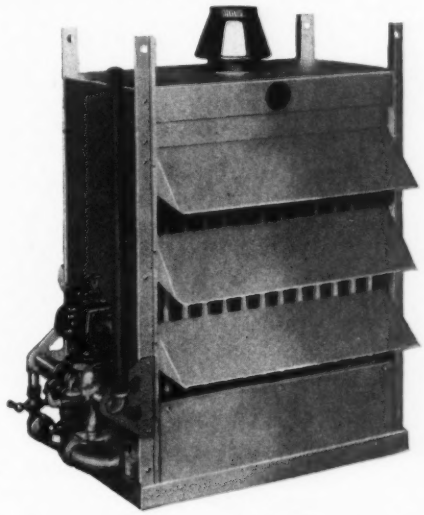
To the Editor:

Our experience in the stoker game has been very disappointing, particularly by reason of a local condition that has to do with our sales. The entire business district of this city is heated from a central plant. Then again our city is a city of homes and not apartment buildings and that eliminates what might be in some localities a splendid prospect.

Insofar as placing stokers in homes is concerned, we have natural gas to compete with, to say nothing of the oil furnaces. Lastly we find that the competition in the stoker game is just as keen as in any other business, in that the work is being figured on a very narrow margin of profit, and we feel that, with the servicing that will be necessary to render in every case, it surely ought to justify something better than the profit that would apply in an ordinary sale.

Signed W. H. (Illinois).

FOR ALL COMMERCIAL HEATING



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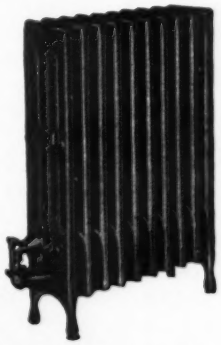

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GARAGES—mills—machine shops—in fact industrial buildings of all kinds have a crying need for Pittsburgh Gas-Fired Unit Heaters.

They heat better and more efficiently because they take up less room—are completely AUTOMATIC—need no servicing—are clean—economical—fast and wholly dependable.

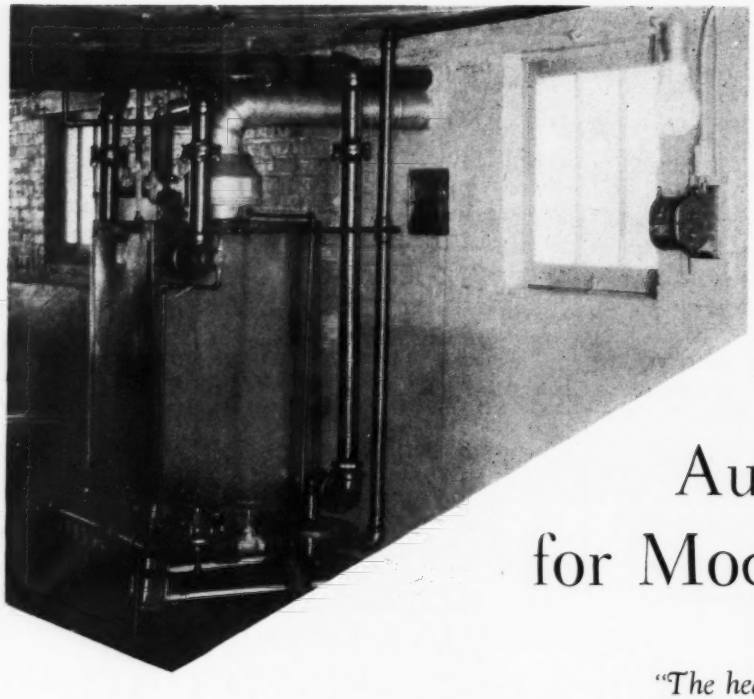
The best of it is, they are easy for you to sell and install. Their many selling points are apparent particularly to owners who have had heating problems. The Pittsburgh Gas-Fired Unit Heater can be used for ventilating—cooling and drying and they are bound to boost the production of any plant in which they are employed.

Investigate them NOW!

TESTING LABORATORY AGA APPROVED

Automatic Gas-Steam Radiator Co.

Brushton and Thomas Sts. PITTSBURGH, PA.



At the left is a view of a typical gas fired heating installation. The motor for the room temperature control is located on the wall at the right of the window

Automatic Heat for Modest Homes

"The heating contractor who follows the trend in his own particular territory and who sells new ideas is the one who gets the business. The opportunity is great and the field is wide for it is not with the very wealthy that automatic heat is most appreciated. It is the man who has to take care of his own boiler who is most benefited by the added convenience that may be his for little more cost"

By C. B. MATHEWS

ONE match a year for the last three years has started the fire which has warmed the residence of David Weikoff throughout the heating season. Mr. Weikoff, a postal clerk, is proud of his gas boiler which makes this convenience possible and claims that his is the perfect heating system.

Time was, and not so very long ago, when *automatic heat* was considered as only for the very wealthy and certainly not for a man of Mr. Weikoff's income, but it is now the "Mr. Weikoff's" of the country who have opened up an extensive field for its advancement. It is not until an invention ceases to be a luxury and becomes almost a necessity to the mass of the people that it begins to carry any great weight.

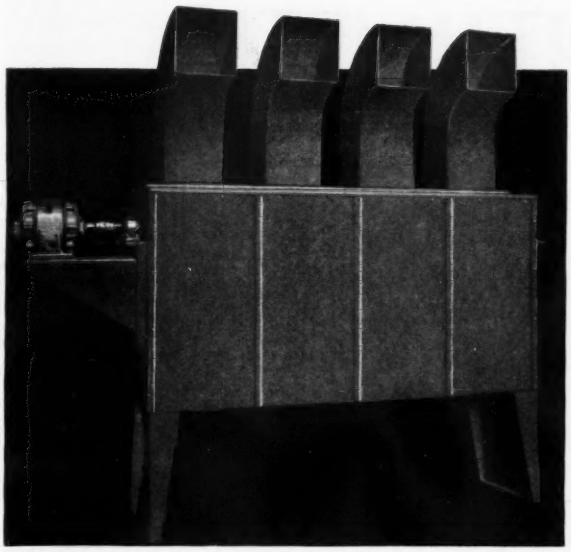
And so it is with *automatic heat*. As heating contractors we have been at a point of vantage and have watched it take hold gradually. Such a radical change in the method and standard of heating was not accepted all of a sudden but has crept in slowly until now it is with us in full swing and without any great disturbance to the usual order of living.

It has been a matter of education and those interested in promoting it have had very definite aims as to its advancement and have been fully aware that it was the "Mr. Weikoffs" of the modest homes whom they must interest if they were to sell their products in any great volume.

In our own particular territory, and we would judge that it is not so different from any other, we have watched the heating trend over the past five years. It has been particularly apparent with the speculative builder who voices the wants of the people to whom he sells his homes. Five years ago he was putting in warm air furnaces. It took two years to sell him on the idea of radiator heating. That accomplished, he began to find it hard to sell a home without radiator heat. His next demand was for radiator heat with further refinements such as jacketed boilers and concealed radiation. Now he wants *automatic heat*.

It is the heating contractor who follows this trend and sells these new ideas who gets the business, and the opportunity is great and the field is wide for it is not to the very wealthy that *automatic heat* is the greatest blessing. It is the man who has to take care of his own boiler, who has to carry out his own ashes, who most appreciates the added convenience that may be his for little more cost, or cost of up-keep, than he has had with the old antiquated methods that he has been using.

Mr. Weikoff's is an illustration of a gradual rise in heating aspirations and a gradual improvement in his heating equipment to the state of perfection that he now claims for it. His home, a five room bungalow, was



They are O. K.

ANY industrial heating problem can be solved successfully and with marked economy by the application of Clarage UNITHERM Unit Heaters.

The Clarage UNITHERM is equipped with centrifugal fans positive in action, and with a heating coil capable of pressures up to 200 pounds.

All parts of a UNITHERM are accessible. Both fan assembly and heating coil can be easily removed—no need to disturb either motor or steam and return lines.

The fans operate quietly, and are designed with a self-limiting horsepower characteristic.

The exterior of the unit is painted a pleasing green. Its excellent, clean-cut appearance harmonizes well with the finest of factory surroundings.

You have undoubtedly overlooked the most modern heating equipment available, unless you have a Clarage recommendation on Clarage UNITHERM. Capacities from 217,000 to 866,000 B. t. u., either suspended type, or floor type as shown above.

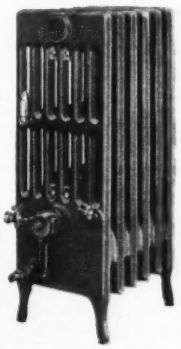
Write for full details. CLARAGE FAN COMPANY, Kalamazoo, Michigan. Sales Engineering Offices in Principal Cities.

CLARAGE
UNITHERM UNIT HEATERS

"There She Blows"

WHEN that cry from the watch is heard aboard a whaling schooner there is **ACTION**. Every man responds to the cry—because it means **OPPORTUNITY**.

True our opportunities don't come in the form of whales—but, nevertheless, they come and right now you have this **OPPORTUNITY** to cash in tremendously on a heating unit that is rapidly being recognized by the American Home Owners.



"MONARCH" GAS STEAM RADIATORS

will decrease fuel cost no matter what method of heating is used.

"MONARCH" GAS STEAM RADIATORS

may be installed in place of ordinary radiators in a Central Steam Heating System. They may be used as ordinary steam radiators, or may be operated separately, as a complete heating unit, saving their owners many dollars during Spring and Fall when weather is unseasonal.

We surely would like to shout something to you that would mean the same as "**THERE SHE BLOWS**" to make you realize just what the balance of this year means to any Plumbing and Heating Contractor that believes in **ACTION**.

HOLD THAT BID!

Drop your anchor in the mail to-day. Find out about our New Deal in Gas Fired Appliances effective October 1st, as we are anxious to prove on black and white the savings of hundreds of dollars yearly.

PITTSBURG WATER HEATER CO.
Pittsburgh, Pa.

Let 'er blow—our anchor's out—
we're cleared for action.

Name.....

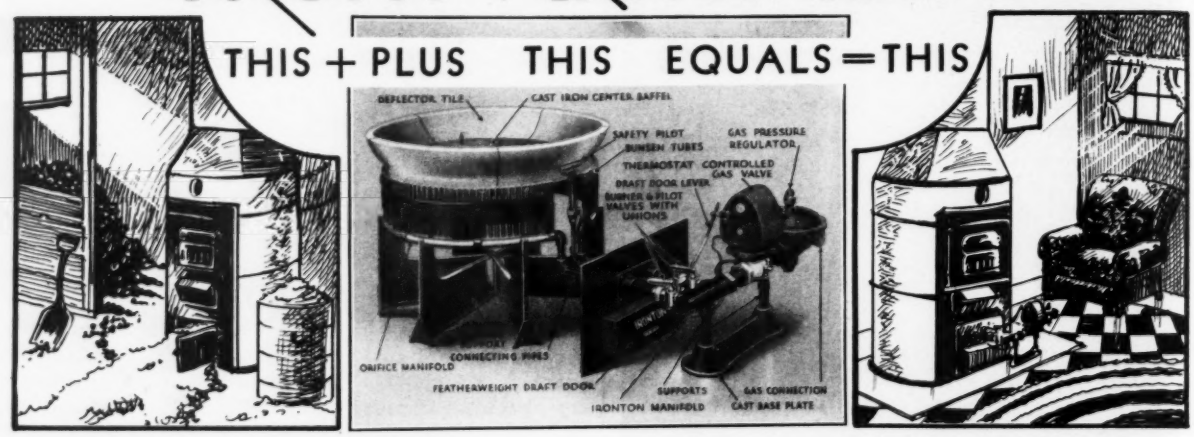
Address.....

City..... State.....

AUTOMATIC HEAT

PROFIT ARITHMETIC

THIS + PLUS THIS EQUALS = THIS

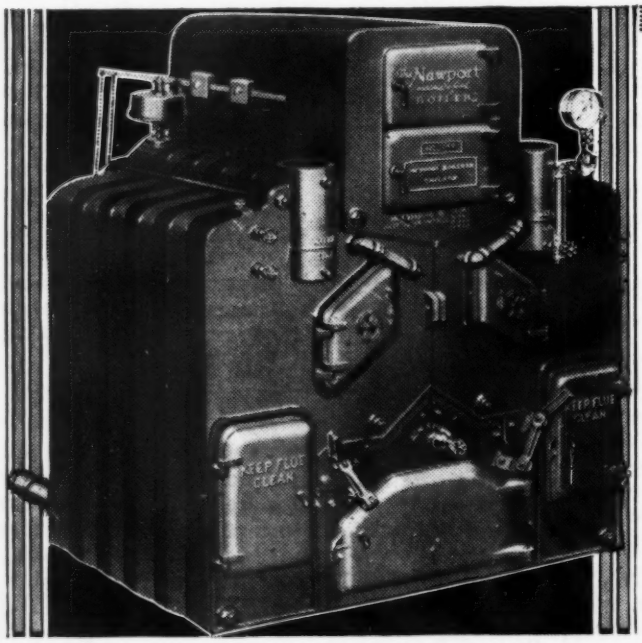


IRONTON BUNSEN TUBE GAS CONVERSION BURNERS

Now you can bring modernization to your customers at a price they can afford to pay. How many warm air heating installations are there right in your own territory that can be transformed from inefficient, costly, troublesome nuisances to convenient, economical, clean automatic systems by use of the Ironton Bunsen Tube Gas Conversion Burners? Check up on this profitable field and check up on the superiority and sales appeal of the Ironton Burner. It will pay you well! Write us for complete details.

BURNER DIVISION

CONTINENTAL STOVE CORPORATION, IRONTON, OHIO



RICHARDSON & BOYNTON CO.

Heating and Cooking Apparatus Since 1837

260 Fifth Avenue, New York, N. Y. Utica, N. Y.

CLEVELAND BROOKLYN NEW HAVEN DOVER
PHILADELPHIA BOSTON CHICAGO BUFFALO
MINNEAPOLIS CINCINNATI PROVIDENCE DETROIT

Here's your —

MONEY MAKER

for this season . . . the New

R & B NEWPORT MAGAZINE FEED BOILER

And what a great story of heating economy you have to tell your customers!

IMAGINE heating a 7-room house for a whole season with buckwheat coal for as little as $75! . . . with all the convenience of automatic feed. And imagine being able to tell your customers that they can buy it on a convenient time-payment plan of unusually LOW installments, starting at $9.50 monthly . . . and that the monthly payments are protected with Prudential Life Insurance (without medical examination), if you desire.

Here's a whale of a good sales story that'll turn into real profit every time you tell it . . . and begin telling right away! Send the coupon for full details—NOW, when the time is ripe.

RICHARDSON & BOYNTON CO.
260 Fifth Avenue, New York

Please send me, without obligation, complete details on the new R & B Newport Boiler.

NAME .....

ADDRESS .....

.....

originally equipped with a coal-fired hot water heating system. That was a step-up from the warm air furnace in his former home. This hot water system heated adequately, but the boiler, while theoretically of ample capacity, was a four section round boiler which demanded frequent firing, ate up the coal fast and furiously, and then for want of flue travel and heating surface, sent the greater part of its heat up the chimney.

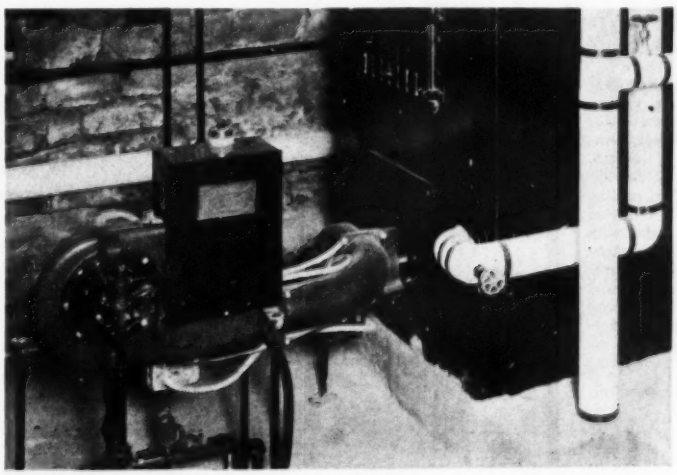
He had the house weather-stripped and then insulated. Each of these improvements helped but did not appreciably reduce the fuel consumption. We advised him that poor judgment had been used in selecting his boiler, that two additional sections added would greatly increase its efficiency, but we would recommend that rather than go to the expense, he install a gas boiler.

It was a new idea to him, but the more he thought about it, the more it appealed to him. He appreciated the cleanliness factor, the small additional cost of up-keep, the even healthful temperature that would be maintained, but above all things and what really swung him over the top and closed the sale was the fact that there would be NO MORE ASHES TO CARRY OUT.

One owner gets the idea of automatic heat gradually. The way in which he finally becomes sold on a complete system is described

Having burned more than the average amount of coal he had had more than the average amount of ashes to dispose of, and after the gas boiler was installed he found it a novel and pleasing experience to be able to sleep an hour longer in the morning because there was no fire to shake down and stroke and no ash cans to put out for collection.

Another installation in a modest home that we have followed through and that we have seen come step by step to *automatic heating* was that of Mr. and Mrs. Steiler. Both hold minor executive positions in an office here in the city. They bought an old home in the country, remodeled it, and installed a coal-fired radiator heating system. The heating arrangement proved unsatisfactory, for a negro woman took care of the place who could not seem to get the hang of the drafts and dampers, and half of the time when they came home tired from a hard day at the office, the fire would have to be rekindled. They managed to get along with it as best they could until they saw their way clear to install *automatic heat*. The old boiler, not sufficient for burning oil, was removed, and a new boiler and an oil burner were installed. Now whether they come home late or early the house is uniformly comfortable.



"The old boiler, not efficient for burning oil, was removed and a new boiler and an oil burner were installed. Now, whether they come home early or late the house is uniformly comfortable

To the average person heating layouts and mechanical equipment are more or less of a mystery and when consulted by prospective home-builders, we go over their plans carefully with them and try to recommend to the best of our knowledge what we consider the heating system best suited to their needs.

Gas boiler installation made in the new home of two elderly spinsters. Skeptical of cost at first. Enthusiastic over results when gas bills arive

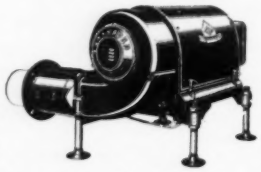
There was, for example, the gas boiler installation made in the new home of two elderly spinsters. Both work and are away from home all day, leaving a wire haired terrier to take care of the house. When planning to build, we recommended that they install an automatic gas-fired steam heating system as best adapted to their requirements. They were skeptical of it, having heard from friends with inefficient jobs that gas fuel was very costly and only for the very rich to use. Gas boiler users, to whom we referred them, finally convinced them, however, by their enthusiasm and reports as to their gas bills, that they would be making no mistake in installing efficient gas equipment, and they would now sooner part with anything in the house than the heating plant.

Lawyer for building and loan company boosts gas heating with actual gas bills showing cost over period of year

Last summer I went down to a building and loan office to sign a release on an installation which we had just completed, so that the owner might get his loan on the property. Mr. Lewis, the owner, had remodeled an old residence into three small apartments, and we had installed there three separate gas-fired heating systems.

The lawyer for this loan company, Mr. Wright, was also a customer for whom we had in-

Are You Selling *Trouble-Free Heating Service* or Just Oil Burners?



IT SOMETIMES happens that a dealer permits his better judgment to be sidetracked by the lure of greater profits. He takes on the so-and-so oil burner and earns the profits—only to see them dissipated by repeated service calls.

The Branford Automatic Oil Burner, made by The Malleable Iron Fittings Company of Branford, Connecticut (founded in 1864), offers and delivers even, dependable, *trouble-free* heating service month in and month out, year in and year out.

Holders of the BRANFORD franchise operate with complete confidence in their product, for they know that this Company stands squarely in back of every Branford Oil Burner sold, and back of the Company is a 67-year old reputation of fair dealing and dependable products.

We are interested in hearing from responsible dealers.

THE MALLEABLE IRON FITTINGS CO.
Dept. 40 :: Branford, Conn.

BRANFORD OIL BURNER

PROFITS *that you can take* NOW

COOK HEAT CONTROL
for COKE *or* COAL HEATING PLANTS

Sell this simple device for securing comfortable, even temperatures in the home and add substantially to your income this season. Cook Heat Control is quickly and easily installed, making an additional profit for the dealer. No gears, no batteries, motors or springs to require service. A liberal time payment plan speeds up sales with 90% of the sales price immediately advanced to the dealer. We supply folders, window displays, demonstrators to help you sell. Start selling your territory now. Write us on your letterhead for complete information by return mail.

Guaranteed for Two Full Heating Seasons

IT COSTS YOU **$22.50**

YOU SELL FOR **$49.50**

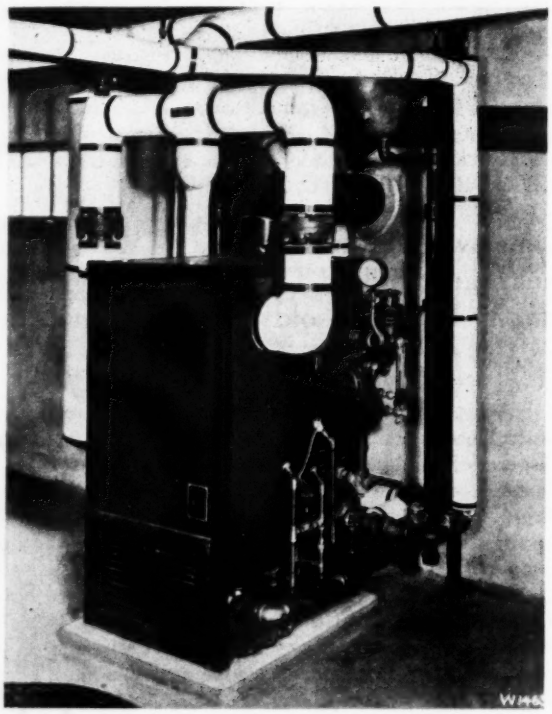
YOUR MARGIN **$27.00**

Free from service expense

COOK ELECTRIC CO.
2682 Southport Ave. Chicago, Ill.

stalled a gas-fired heating system. He congratulated Mr. Lewis on his choice of heating equipment, telling him that such equipment had been noted by the loan company in determining the amount of the loan they would make. Mr. Lewis said he was convinced of the greater convenience he was going to have but was still a bit afraid of what his fuel cost would be. Mr. Wright walked over to his file, pulled out a record of his gas bills, bills over a period of a year, amounting to $153.00, including gas for heating, cooking, and domestic hot water supply in a twelve room house, having fourteen radiators, totaling 924 sq. ft. of radiation.

"It is for just such skeptics as you," he said, "that I keep these bills at hand."



"Mr. Wright walked over to his file and pulled out a record of his gas bills for over a period of a year. These amounted to $153.00, including gas for heating, cooking, and domestic hot water supply in a 12-room house"

Where a builder hesitates to plunge in to the full depth and install gas, oil, or stoker-fired equipment, we find it easy to at least sell him a thermostat for a coal-fired installation, for with electric controls available now at such reasonable prices, it makes very little difference in the cost of an installation and means much in convenience, efficiency, and fuel saving, especially on a steam job, such as many of these investment jobs are.

The same applies to owners also.

Many heating contractors overlook the opportunity to specify thermostatic equipment on coal installations, and yet if it is included as an integral part of the specifications, the majority of prospects will show a preference for those specifications, and it is almost a sure sale.

We recently submitted our specifications and contract to a prospect who looked at once for the price.

"Why you are better than a $100.00 high on this job," he said.

We made no explanation, and he started to read the specifications. When he came to the paragraph about the thermostat—

"Oh, I see now where the difference comes in. You have specified a thermostat," he exclaimed.

Temperature control equipment may be included in specifications. Contractor finds majority of prospects will show a preference for those specifications

Anytime is right, but we have found that the late winter and early spring, usually dull periods for the heating contractor, are excellent times to sell the idea of *automatic heat* to the smaller homes, for it is then that the housewife is ever so tired of firing the boiler and the man of the house is weary of his part in the heating program, too.

Last summer a leading manufacturer of thermostatic equipment published an advertisement with the heading, " . . . and Don't Forget to Fix the Fire." It pictured a care-worn woman trudging down the basement steps once more to "fix the fire" that refused to stay fixed and was continually crying for attention.

It is to these thousands of average Americans with average homes that *automatic heat* is the greatest boon of all and who would not agree if they chanced to read in a recently published article, that "the man who devised the automatic temperature control was comparable to Shakespeare, Michelangelo, or Beethoven."

How Manufactured Gas Is Produced

MANUFACTURED gas consists of a number of gases such as hydrogen, carbon monoxide, methane, benzine and naphthalene. It is usually produced by one of two processes; one involves the use of soft coal alone and is thus termed coal gas. The other uses both soft coal and crude oil and is known as water gas because steam, in this process, is brought into intimate contact with incandescent carbon. In the soft coal regions there is still another process for manufacturing gas through by-product coke ovens.

Contain Hydrogen Sulphide

All of these gases contain hydrogen sulphide after they have passed through the scrubbing and condensing equipment. Since hydrogen sulphide in the presence of moisture (H_2O) forms sulphuric acid in minute quantities it must be eliminated. In the atmosphere it would irritate the nose, throat, lungs and eyes. In machinery, such as gas engines, it would corrode metals. Its removal is accomplished in boxes containing iron oxide, which are known as purifiers, through which the manufactured gas is forced to pass before it reaches the gas holder.

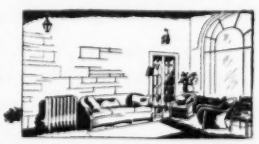
The reaction necessary for the removal of the hydrogen sulphide (H_2S) depends on the presence of water. In other words there could be no removal if the manufactured gas and the iron oxide were both dry. Therefore water must be present in either the gas or the oxide.

There is a Wide and Profitable Market for this Economical Gas Heating System

Today, when [illegible] possibility can be overlooked, Clow Gasteam Radiators offer a market that is already and waiting. In every community there are countless stores, factories, offices and homes where additional heat is needed. Radiators are compact and good looking. Each radiator makes its own steam. Heat is available almost immediately, and can be turned off as quickly. No boiler or intricate piping. Installation is simple.

The greater use of natural gas has very much increased the interest in gas heating. The market for Clow Gasteam Radiators is steady—not dependent on new construction. They are the best way to modernize countless existing stove-heated stores, apartments, offices, etc. The recent reduction in price makes Clow Gasteam Radiators more easy to sell, meets competition — yet leaves a substantial [illegible].

Proved by 30 years of use, Clow Gasteam is a dependable and economical heating system. Sold on a dollars-and-cents basis as well as convenience. Write to us for new literature that will help you sell Clow Gasteam this fall.



SUN PORCH—*Few sun porches are piped for heat. Clow Gasteam can be installed with little expense.*

STORE—*Many thousands of stores everywhere, heated with Clow Gasteam, prove the practicability of this system.*

OFFICE—*Countless offices are equipped with this heating system that provides heat at any time of the day or night.*

ATTIC—*The increasing use of attics creates a new need for heat. Clow Gasteam is the practical answer.*

JAMES B. CLOW & SONS 201-299 N. Talman Avenue, CHICAGO

CLOW GASTEAM

Listed by Underwriters Laboratories

Approved by A. G. A. Testing Laboratory

How a Heating Contractor Sells Stokers

By WM. R. STEVENS

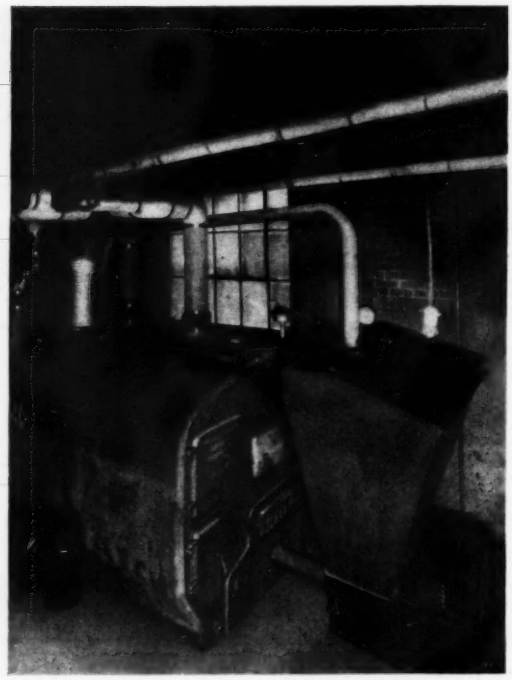


Fig. 1—This stoker installation was made for a pattern-maker who was losing patterns because of uneven temperatures and non-automatic operation of his heating equipment

THERE is a vast field waiting for the progressive heating contractor who is willing to exert a little extra effort and add the sale of stokers to his contract for new heating installations as well as to old installations already made. Henry Niemes, Inc., of Cincinnati, Ohio, heating contractors with whom the writer is connected, have applied this extra effort in the last year with a considerable amount of success. The accompanying photographs will illustrate a few of the stoker installations which we have made.

A pattern maker having an installation of a boiler with unit heaters was losing a number of very expensive patterns because of not being able to obtain uniform heat through hand firing. At night, when the temperature would drop, due to a banked fire, the glue would harden and not dry properly, the result being a poor pattern. The installation of a

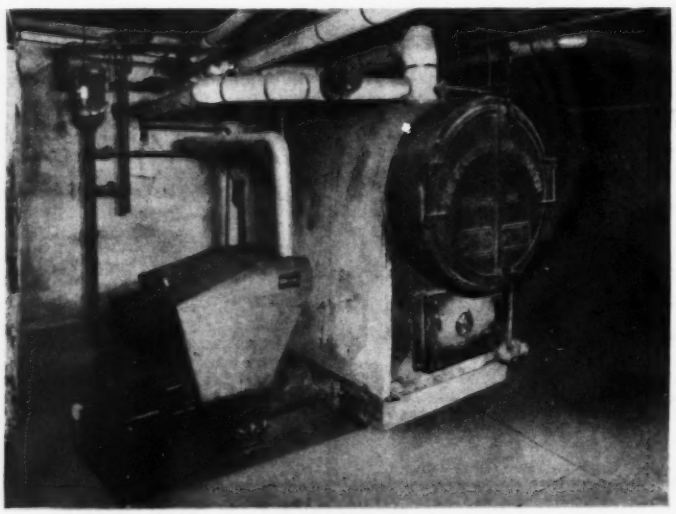


Fig. 2—In the remodeling job shown at the left, a new boiler was installed as well as a stoker. This is in a bakery and a constant supply of steam is necessary

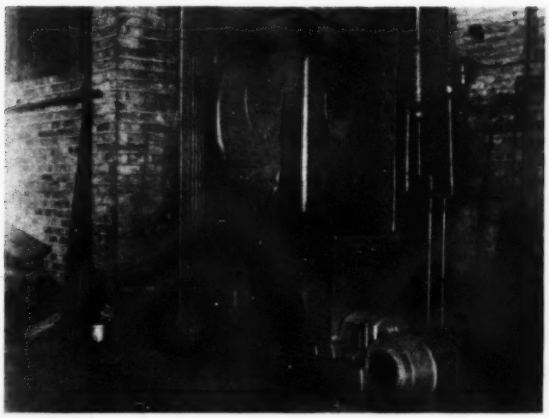


Fig. 3 — Before the stoker shown at the right was installed, the owner was confronted with a smoke problem. Automatic firing equipment and controls solved it

stoker under his boiler solved his problem as he filled the stoker hopper at night and allowed the stoker to operate over the twenty-four hour period. It was controlled by a thermostat in the shop, thereby maintaining a uniform temperature at all times. In addition to saving his patterns his fuel consumption was reduced as well as his labor cost. The view shown in Fig. 1 illustrates this stoker installation. The steel coal bin was built up to the hopper of the stoker. This bin has a hinged door which, when opened, forms a chute which fits into the stoker hopper. When the bin is full the fuel slides into the hopper without the use of a shovel, as the bin empties the fuel is shoveled into the slide which reduces labor as well as increases the cleanliness of the boiler room.

Stoker Installed to Solve Baker's Problems

In another case a baker was using a small boiler to supply steam to his ovens to keep rye bread moist during the baking. The installation of a low pressure boiler with a stoker and an automatic water feeder solved his problem. A more uniform flow and drier steam was obtained with the new boiler and stoker and the baker estimated he saved one hundred dollars each month. The heating of the water also was added to this boiler later. The photograph shown in Fig. 2 illustrates this installation. The stoker was applied to the side of the boiler in this case. It was pitted because the new boiler was installed to maintain the original water line of the old original boiler, but note that the stoker only is pitted and not the boiler. Also note the pressure control and low water fuel cut off installed at the right side of the boiler. Just behind this is the water feeder. This stoker is controlled by pressure only as a constant supply of steam is desired at all times.

Smoke Nuisance Overcome

The third installation shown in Fig. 3 was made to overcome a smoke problem. The local smoke inspector noted the stack before the stoker installation and also after. This is our greatest sales argument in favor of the stoker, especially in large cities, where they have a smoke abatement department. This installation, in addition, reduced the fuel consumption as well as the labor and furnished more uniform heat. Note also in this picture both the low water fuel cut-off and pressure control. An electric light and horn signal was installed on the switchboard just outside of the picture at the left. This signal comes into operation in case of a stoppage in the worm or other abnormal overload on the coal feed.

Apartment buildings also are good customers for stoker installations. Fig. 4 shows an apartment installation. Note again the stoker was installed in

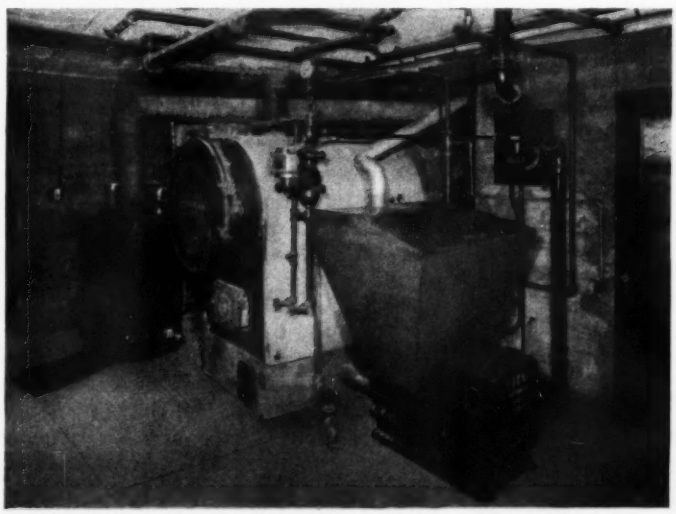
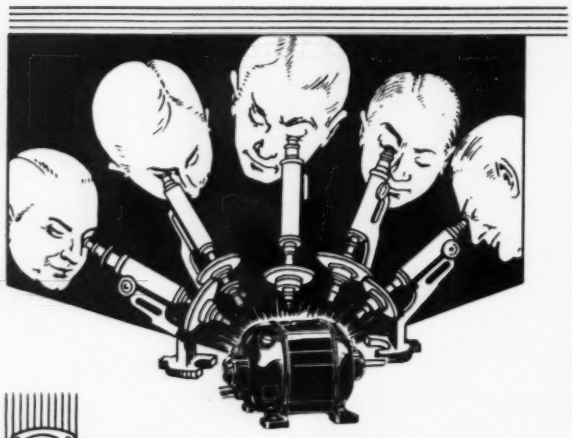


Fig. 4—Here is a side installation of a stoker under a boiler in an apartment building. Note that the entire front of the boiler is free and accessible

AUTOMATIC HEAT



Do You Know?

That it is the seemingly small and insignificant details of design that make the difference between "just another motor" and a Leland motor?

Leland motors, by their very appearance, show that they receive the specific detailed attention that develops a product of distinction. They have in ten short years achieved both national and international prominence.

Builders of oil burners, stokers, water systems, unit heaters, refrigeration—and other appliances requiring a long lived, dependable, QUIET motor—should investigate.

Particularly is the Leland cradle mounted brush-lifting motor recommended where quiet operation is imperative. This special base deadens all transmitted noises; eliminates vibration almost entirely.

A. C. Repulsion-induction
D.C. Compound wound
A. C. Polyphase
Interchangeable frames

THE LELAND ELECTRIC CO.
DAYTON · OHIO · · · U·S·A

Canadian Address Toronto

Cable Address "Lelect Dayton"

Leland Motors

the side of the boiler, leaving the fire door free for the removal of clinkers. Also, again the low water fuel cut-off and pressure controls were installed. This stoker is not controlled by a thermostat, but by pressure and a manual control switch located in the janitor's apartment. The alarm signal, which is an electric bell, also is located in the janitor's apartment.

Stoker Installed in Power Plant

We made another stoker installation in a power plant operating over a range of from 300 b.h.p. at 125 lb. pressure to 50 b.h.p. at 25 lb. pressure. This

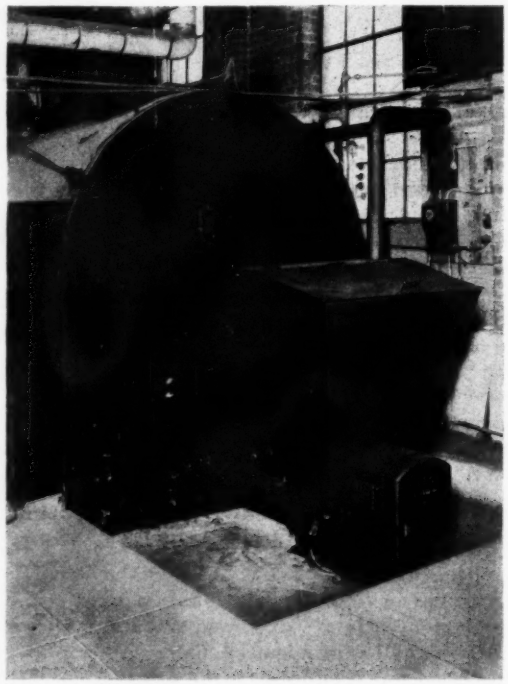


Fig. 5—In this power plant, the contractor mounted a bell on the control panel seen at the right. This rings an alarm in the event a stoppage occurs in the feed

range was covered by the pressure control switch mounted on the control panel just beside the relay switch seen at the bottom of the panel in Fig. 5. This control is adjustable with a key to obtain any pressure from 5 lb. to 150 lb. Just below the pressure control note the alarm signal. A loss of pressure in this plant when operating at high pressures is vital and therefore the alarm signal is a very important part of this installation. Again the absence of smoke was a feature of the job. The low drum necessitated the pitting of the stoker to prevent the fuel bed closing off the lower row of tubes. The blower is not shown in the photograph, as it is installed in the side between the boiler and the outside wall.

These installations show quite conclusively how one typical heating contractor sells stokers. It is recognized that the article does not give his sales procedure but it tells how stoker sales were made possible because of his being able to apply a knowledge of heating as well as of stokers in bringing about a desired correction or operation.

"The Next Improvement We Make—"

"Without question, the next improvement we make in our home will be the addition of automatic heat. What kind? I really don't know. Oil burners have a lot in their favor, stokers have come right up to the fore and natural gas is putting gas heat right within our reach.

"I'll talk it over with Mr. Jones. He's the dealer who put the heating system in here. Whatever he says will be the thing. At any rate, you can bet I'm not going to go through another winter of inconvenience and uncertainty."

That's the actual statement of a Chicago home owner. It's typical of what hundreds of thousands all over the country would say if you asked them the question, "What improvement are you going to make next in your home?"

Naturally, when a home owner decides to install automatic heat, he wants to know all about it. He wants to know that when it goes in, it will serve right.

He wants a good company behind it, but more than that—far more than that—he wants a good dealer behind it. He wants a dealer who is part and parcel of his community, who is established there, ready to answer questions in a minute or give advice when it is needed.

The home owner wants to buy automatic heat just as he wants to buy an automobile or engage the services of a doctor. He wants to know that the man, whether doctor, automobile dealer or heating dealer, "knows his stuff."

In the case of the heating dealer, there is no question about his ability, his standing as a business man, and his knowledge.

The leading heating dealers of the country depend upon the pages of AUTOMATIC HEAT in DOMESTIC ENGINEERING to give them their information. They read it regularly.

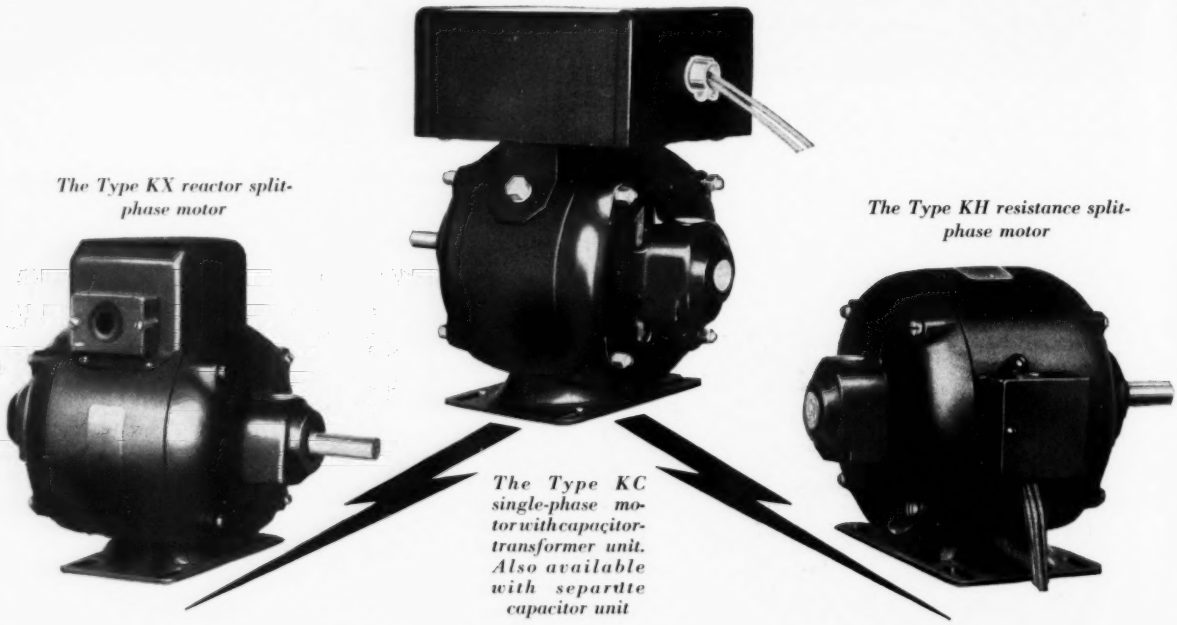
AUTOMATIC HEAT

in

Domestic Engineering

1900 Prairie Avenue ✦ Chicago, Ill.

AUTOMATIC HEAT



The Type KX reactor split-phase motor

The Type KC single-phase motor with capacitor-transformer unit. Also available with separate capacitor unit

The Type KH resistance split-phase motor

DEPENDABLE MOTORS

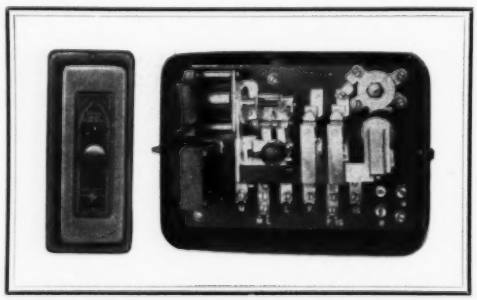
FOR ALL AUTOMATIC HEATING SYSTEMS

GENERAL ELECTRIC offers a complete line of dependable fractional-horsepower motor drives to meet the performance characteristics of any type of automatic heating system. And more, General Electric offers nation-wide service in keeping every drive "on its toes". Don't overlook these advantages when motorizing.

Back of every G-E fractional-horsepower motor are nearly thirty years of design, manufacture, and application experience. The results are reflected in fractional-horsepower motors that are simple in construction, quiet in operation, high in efficiency, dependable. Motors are available in capacitor, reactor split-phase, and resistance split-phase types.

Remember, whether you use standard or highly special motors, General Electric application engineers will be glad to help you solve your drive problems, just as they have successfully solved those of others. Try G-E motor service to-day; there's a G-E office near you with complete information on G-E motors for your particular requirements.

In addition to a complete line of fractional-horsepower motors, and of transformers, cable, etc., to meet automatic-heating requirements, General Electric manufactures control equipment for the modern oil burner. This new control utilizes a Telechron motor drive for timing regulation, hence there is no clock to wind or regulate. In the thermostat, a patented preheat coil prevents "overshooting" or "lagging" of the room temperature. Heat control of G-E manufacture is marketed by the Penn Heat Control Company.



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GENERAL ELECTRIC

SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

Short Course in Gas Heating Held at Hammond and South Bend, Ind.

AN ACTIVE program of co-operation which has been going on since April was reviewed and plans for future efforts were outlined in the cities of Hammond and South Bend, Ind., when heating contractors, manufacturers of gas heating equipment, representatives of the Northern Indiana Public Service Co., and Purdue University met in those cities. The Hammond meeting was held on September 17 and 18, and the South Bend meeting was held a week later on September 22 and 23. The first meeting brought out an attendance of 125 while 115 registered at South Bend and of these, 45 were heating contractors, 35 were public utility representatives and 34 were manufacturers.

Some of those who were present at the short-course in gas heating which was held recently at South Bend, Ind.

In effect the meetings were short courses in gas heating. They were held in the public utility's buildings and the programs which were designed and sponsored by Professor R. B. Leckie of Purdue University covered the various phases of house heating with gas from selling the equipment to installing and servicing it. Both programs were the same since they were presented for similar purposes before different groups of contractors and public utility men in different cities.

The first subject discussed was "The market and the opportunities it presents." It was handled by Stanley Jenks, manager of the merchandise department of the Northern Indiana Public Service Company. He outlined in some detail the market possibilities and the source of profit it held for the heating contractor, stating that the public utilities do not expect the contractor to be interested in gas heating unless there is a profit in it for him.

One of the questions which was asked and which led to an interesting discussion was how can the contractor or salesman keep from talking about price when this is uppermost in the mind of the prospect. It was pointed out that the matter of price of equipment and cost of operation should not be mentioned until all of the advantages of gas heating have been explained to the prospect. One rule given is, do not talk price until you can say, "For all these conveniences and comforts the price is *only* such and such." Another rule is to reduce the cost to a per day basis. Still another suggestion is, subtract the operating cost of the heating plant when it is used with fuels other than gas, from the estimated cost of operation with gas. Then picture this additional cost only as the cost to the owner for the gas heat advantages. In order to make it easier for the owner to be sold on gas, the Northern Indiana Public Service Co. is going to spread the cost of heating with gas over a period of eight months, each payment being equal. The result will be that instead of a January gas bill being a possible ninety dollars, say, it will be reduced to about forty-five or fifty dollars. Of course the October gas bill which might only be ten dollars, will be increased to the forty-five or fifty dollar amount but the owner should not object to this because he will know he is paying for his gas in advance just as he has been accustomed to pay for his coal when he fills his bin.

The technical sessions were devoted to discussions of installation and service problems. These were led by Professor R. B. Leckie.

A. C. Grant of the Minneapolis-Honeywell Regulator Co. talked on control equipment. He outlined the various controls which are needed on gas heating installations and discussed their purpose and reason for being installed from the standpoint of convenience, safety, health and comfort and economy.

A banquet was held in the evening of the first day's meeting. Earl L. Clevenger, as president of the Indiana State Association of Master Plumbers, spoke in behalf of the contractors and Morse DelPlain, as president of the Northern Indiana Public Service Co., outlined their co-operative program.

A luncheon and golf match were the features of the program on the afternoon of the second day's meeting. The Public Service Company was the host.

RETAIL ADVERTISING SERVICE

THE social season—the season in which the home plays so important a part, is about to open. Call attention now to plumbing needs so that the prospective hostess of this winter will look at the arrangements in her home with a critical eye. Use the copy on these pages.

Good Plumbing— An Aid to Entertaining

CONVENIENT plumbing does make entertaining a greater pleasure. Sufficient hot water for all kitchen needs, immediately; clean porcelain surfaces that will not stain; chromium that always shines; even such a convenience as the swing-spout faucet—all these will speed the tasks of preparing a repast, and of "cleaning up" afterwards. Too, if your guests see your kitchen, gleaming whiteness and shining chromium—or color in the kitchen sink—will give you a feeling of satisfaction.

(In this space Your Na e, Etc.)

For one column space

"Lovely" Plumbing — it really means something

Now that the social season is commencing, look at your plumbing arrangements with a critical eye. Are they as colorful, as smart in line, as distinguished in their accessories as the other rooms? If you want to know what we mean by "lovely plumbing," drop in at our store and see the color, the lines, the fittings, now available for kitchen and bathroom. You'll repeat that phrase, and you'll want your guests to see such appointments in your home.

(In this space Your Name, etc.)

A two-column newspaper ad

Dear Madam:

I daresay most people have never considered the plumbing arrangements in their homes with a critical eye.

That is why so many are genuinely surprised when they stop in to see our display. They have not realized the distinction in line, and color, and accessory, which manufacturers have made available.

They suddenly discover the fact that the kitchen and the bathroom have never really been given sufficient thought; and that these rooms have, perhaps, while quite satisfactory in every other way, been in contrast to the style, the distinction, of the other rooms in the home.

Many have grasped at the opportunity to add a touch of the modern by the clever use of accessories in color, or the way in which the new chromium for fittings will freshen up the fixtures to which they are attached.

We should welcome a visit from you. Come in on your next shopping trip. There will be no obligation whatever--feel free to come in and look at the things we are showing.

Very truly yours,
HARRY BROWN

A plumbing sales letter

▲

The copy on these two pages is for the use of readers of DOMESTIC ENGINEERING —without charge. If you wish to use the illustrations, they are sold at $4.20 for twelve —three months' service.

If you are using any of this copy, send us samples. We like to keep in touch with what our readers are doing.

▼

PLUMBING FIXTURES RATE AS HOME FURNISHINGS

"That will be a new viewpoint to many," says Harry Brown, local plumbing and heating contractor. "But few people think of bathroom and kitchen as 'furnished' rooms.

"Yet a home that is otherwise charming and distinctive, may suffer in the total impression it makes when the bathroom and kitchen are compared with the other rooms. We do not give the same thought to the color scheme, or the style of fixtures, when we think of bathroom and kitchen, as when we think of the other rooms in the home.

"Today there are available many colors and many designs in plumbing furnishings. New finishes, such as chromium, make for brightness in accessories, as color and design make for smartness in the fixtures themselves."

Hand this publicity item to your newspaper

Sell Something More Than Heat

The message of automatic heat is spreading rapidly, and the alert heating contractor must keep his community aware of the fact that he is abreast of all of the possibilities of this development in house heating. Use the copy on this page for that purpose.

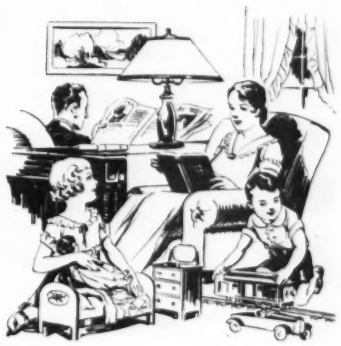
A two-column newspaper ad

Decide Now for Heating Comfort This Winter

Whatever fuel you burned last year—or plan to burn this year—your heating plant may be modernized to make it self-sufficient. Gas, oil, and coal—each fuel has had developed for it appliances that will give you perfect heating comfort with little or no attention—maintaining an even temperature every hour of the day. Thus fuel is conserved, colds due to large fluctuations in temperature are eliminated, and the home owner comes to know the meaning of comfortable and convenient heating.

Phone for an appointment, and learn the facts.

(In this space Your Name, etc.)



Just Right— with Automatic Heat!

JUST right! What a world of comfort for winter evenings in those words! No running into the basement three or four times, no fluctuations in warmth—now too warm or too cold—no danger that the children will catch colds. All this is possible if the heating plant is modernized to make it automatic. No matter what fuel you are burning, your heating plant can be made to take care of itself. Phone for an appointment. We'll be glad to lay the facts before you—without the slightest obligation.

(In this space Your Name, etc.)

A single column ad

1910 LOOKS FUNNY TO THE EYES OF 1931

"And 1931 is going to look just as funny to eyes of 1950," says Harry Brown, local heating contractor. "We think back now on the automobile as it was in 1910 and wonder that it seemed so marvelous then.

"We'll look back in 1950 and wonder how we stood some of the conditions under which we are living today. For, just so far ahead of 1910 as heating practices are today, so much farther will they be ahead of today in 1950. Only I think changes will be more rapid. I believe that within ten years no one would think of building a home without automatic, controlled heat in it, than one would think of building a home without a modern bathroom.

"Some people are enjoying the comfort of automatic heat now—somewhat in advance of the rest of us."

Give this publicity item to your local newspapers

Your Window

Window displays need change. If you have a permanent display of fixtures and equipment, make changes in lighting—use the free floor space for changed displays of accessories. Property owners who pass your window will never be particularly drawn to it if it remains the same in every detail for months at a time. Change—even small changes—is what draws attention to a window.

Dear Madam:

I know that you often wonder how the women of your mother's generation managed to keep their families comfortable, lacking as they did the conveniences that you now have.

And I am sure that the women of the next generation are going to wonder at some of the difficulties--to their eyes--under which you carry on your household activities.

Prime among these will be the manually operated heating plant. Women of the future will not know, generally speaking, what it means to have their entire day thrown out of schedule by a heating plant that goes wrong. For automatic heating in the home is spreading so rapidly that within ten years, I believe, a home without automatic control of its heating equipment will be unthinkable.

But a great many homes are enjoying the comfort of clean, convenient, controlled automatic heat now--no matter what fuel is burned. We'd like very much to show you how your heating plant may be made automatic. Won't you phone for an appointment?

Very truly yours,
HARRY BROWN

A heating sales letter

TWO QUESTIONS

1 Why are leading pipe manufacturers offering pipe in all sizes with beveled ends for welding?

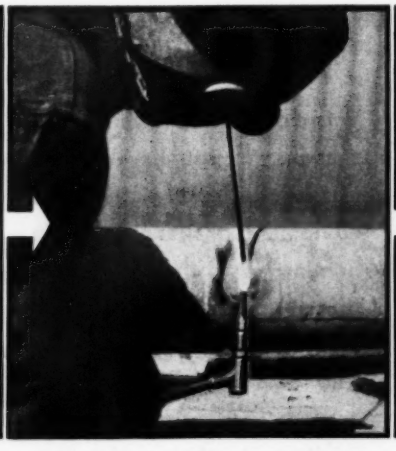
2 Why are established makers of pipe fittings now producing tees, elbows, flanges, and short- and long-radius turns for welding?

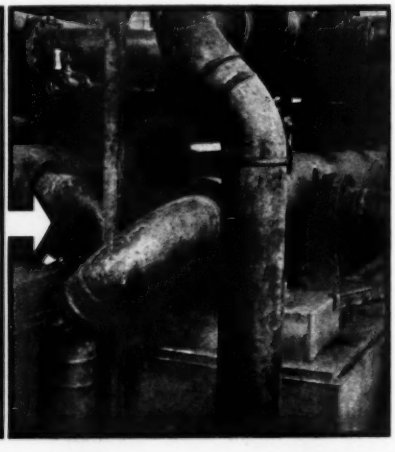
—AND AN ANSWER TO MANY OF YOUR PIPING PROBLEMS

THE ANSWER IS: Because oxy-acetylene welding is now accepted as an economical and dependable method of installing piping systems in office buildings, factories, churches, schools, hospitals, and private homes.

Architects and engineers are specifying oxwelded piping because welding eliminates the chief causes of leakage, friction, radiation losses, and insulation expense. Welded systems are more compact, lighter, stronger, and easier to design and construct. Their first cost is less, and maintenance is negligible.

If you feel that these inherent advantages of oxwelded systems merit further investigation, send today for "Oxwelded Construction for Modern Piping Services," "Design Standards for Oxwelded Steel and Wrought Iron Piping," and "Fabrication of Welded Piping Designs." These books are offered without charge or obligation to architects, specification writers, and engineers.





THE LINDE AIR PRODUCTS COMPANY

Unit of Union Carbide and Carbon Corporation

126 Producing Plants UCC 627 Warehouse Stocks

IN CANADA, DOMINION OXYGEN COMPANY, LTD., TORONTO

District Offices

Atlanta	Detroit	New York
Baltimore	El Paso	Philadelphia
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Buffalo	Kansas City	Salt Lake City
Chicago	Los Angeles	San Francisco
Cleveland	Milwaukee	Seattle
Denver	Minneapolis	Tulsa

LINDE OXYGEN . PREST-O-LITE ACETYLENE . OXWELD APPARATUS AND SUPPLIES . UNION CARBIDE

SUPPLY NEWS

AMONG MANUFACTURERS, WHOLESALERS AND SALESMEN

Two Large Oil Burner Manufacturers Consolidate

The Timken-Detroit Co. and the Silent Automatic Corp., two large manufacturing establishments in the oil burning heating equipment field, will consolidate January 1, 1932, it is announced by officials of the two companies. The new concern will be known as the Timken Silent Automatic Co.

The consolidation will make the Timken Silent Automatic Co. one of the largest units in the oil burner industry. It will increase to nearly $20,000,000 the assets of the Timken-Detroit Axle Co., parent corporation of the Timken-Detroit Co.

Haldeman Finnie

Col. Fred Glover, president of the Timken-Detroit Axle Co., likewise will serve as president of the new company. Others in active management will be Haldeman Finnie, vice president of the Timken-Detroit Co., who is to be vice president and general manager of the re-organized concern; J. L. O'Brien, assistant to the general, and E. V. Walsh, general sales manager.

Walter F. Tant, president, and Karl B. Segall, vice president of the Silent Automatic Corp., will have substantial financial interest in the Timken Silent Automatic Co.

After January 1 the Silent Automatic plant at 12001 Jefferson avenue will be dismantled, and the machinery moved to the Timken-Detroit Axle Co. plant, 100-400 Clark avenue, where all manufacturing activities henceforth will be carried on. Meanwhile, the two concerns will continue to function independently and the sales organization will not be disturbed.

◆

Jones & Laughlin Steel Corp. Moves New York Offices

New York offices of the Jones & Laughlin Steel Corp., Pittsburgh, will be moved from 165 Broadway to 500 Fifth Avenue, nineteenth floor, effective Oct. 17.

Acetylene Association Will Hold Convention in Chicago

The thirty-second annual convention of the International Acetylene Association will be held at the Congress hotel, Chicago, Ill., on November 11, 12 and 13, 1931. The association is making plans for a large attendance and an interesting and instructive program has been arranged.

Among the subjects that will be discussed are: Business prospects for 1933; welding and its future; revised A. S. M. E. boiler code; training welders; testing welds; aircraft welding; railroad welding; marine welding; automobile welding; welded piping designs; pipe line welding; welding the new alloys; painting, enameling and lacquering welded joints; engineering education in welding; industrial acceptance of welding.

Motion pictures and slides will be used to illustrate many of these discussions.

◆

Speakman Co. Opens New Showroom in Wilmington, Del.

An innovation in showrooms has just been offered to the people of Wilmington, Del., by the Speakman Co., of that city, manufacturers of showers and fixtures.

The company, in addition to having a plant located several blocks from the center of Wilmington, maintains a showroom and wholesale plumbing supply house at 816-822 Tatnall street, which is one of the main thoroughfares of the city.

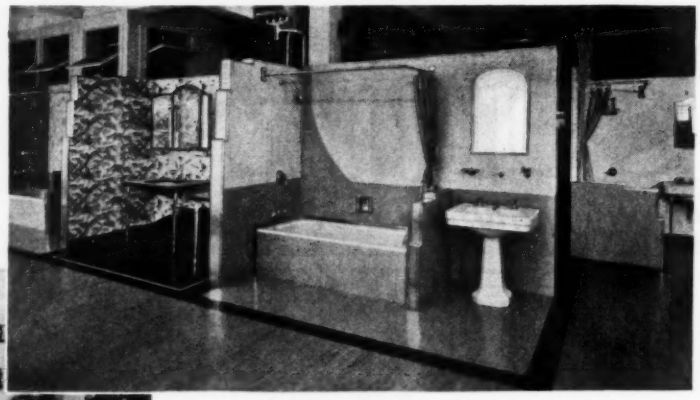
The new Speakman showroom takes the place of the one which the company has had for several years, and fronts on Tatnall street. The former showroom was located in the rear part of the building, with the general office facing the street.

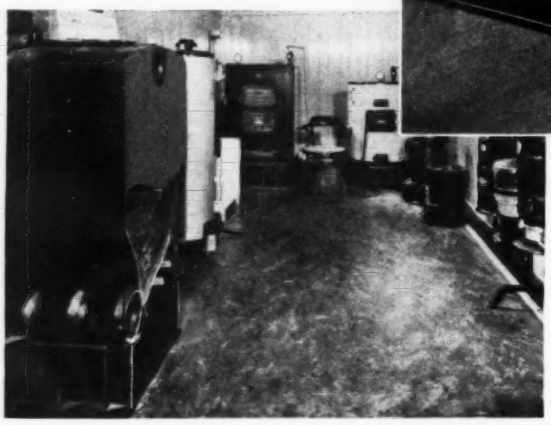
Entire kitchens have been created—there being one room devoted to kitchen cabinets, and their relation to modern sinks. An entire room has been given over to heating equipment, and a line of both gas and coal-fired domestic water heating equipment is shown.

The entire first floor front of the showroom shows a wall of windows. A metal canopy has been built over the doorway. Tiled steps lead from the modernly-designed door—also made of metal—to the showroom floor, where, located so as to be visible from the street, there are three cubicles, or bays, each showing a harmonizing

tub and lavatory, which is skilfully merged with the background design.

In the center of the floor is a newly-designed Roman type sunken tub, in canary yellow, framed by quartz blue tile, with special handles, escutcheons, and nozzles on the water supplies. Close to this is one of the new monel metal sinks.





Two views of the attractive new showroom of Speakman Company, in Wilmington, Del. The picture above shows one section of the display of plumbing fixtures. At left is a view of the display of heating materials

Several types of lavatories, in color, are also on display in this front showroom. One, an imported type, is made of black glass, and has glass handles. On the other side of the room is a tub and shower combination, with the shower stall behind the tub.

The office of the company is located behind this part of the showroom with a corridor on the side from which entrance is made into various other rooms, where lavatories, water closets, kitchen and laundry equipment, also appliances and accessories, are on display.

The showroom has been officially opened. At night the front part is lighted by forty-five electric lights, each of several hundred watts, backed by reflectors of special light-diffusing design. This lights up the entire street before the showroom and has been responsible for attracting considerable additional traffic to the street at night.

In announcing the new showroom, exact reproduction of the front of the building, also of the display bays, or cubicles, and separate rooms were incorporated into a folder which was sent to a thousand of the leading persons in the city, together with an invitation to visit the showroom. A campaign of large space advertising was run in the local newspapers, each reproducing a view taken in the showroom.

◆

Blake Specialty Co. Appoints New Representatives in New York and Pennsylvania

Blake Specialty Co., Rock Island, Ill., has just appointed two new sales representatives for the Eastern territory. H. M. Flemming Co., Inc., 30 Church street, New York City, will represent the company in the New York metropolitan district. The other new representative is the Kenney Co., Empire building, Pittsburgh, Pa., which will represent the Blake Specialty Co. in the western part of Pennsylvania.

Buys Hand Sprayer Business

The Electric Sprayit Co., of South Bend, Ind., has purchased the hand sprayer business of the G-V Sprayer Co., with plants at Wichita, Kans., and Lebanon, Tenn. The machinery, inventories and fixtures have been moved to South Bend where the new hand sprayer division will be consolidated with the company's power sprayer division.

◆

Moves Offices and Plant

The Wildson Welder and Metals Co., Inc., recently moved its offices and plant from Hoboken, N. J., to its new building at 956-70 Thirty-eighth street, North Bergen, N. J.

◆

Moves to Larger Quarters

The American Valve Co. has moved its offices and warehouse from 16 Nassau street, Brooklyn, N. Y., to new and larger quarters at 46-16 Northern boulevard, Long Island City, N. Y. The new location gives the company increased warehouse facilities.

◆

Death of George D. Hohnbach

George D. Hohnbach, secretary and treasurer of the Acme Plumbing & Heating Supply Co., Milwaukee, Wis., died recently at his home in that city. Mr. Hohnbach, who was a graduate of the University of Wisconsin, was the son of Richard G. Hohnbach, president of the wholesale firm. He was in his 26th year.

Mr. Hohnbach received his B.A. degree in commerce in 1928. He was a life member of the Memorial Union Association. He is survived by his widow, Kathryn Larson Hohnbach, and a brother, Frederic. Funeral services were held September 26, with burial at St. Thomas Aquinas' church, in Milwaukee.

Otto G. Hitchcock

The Wholesaler's Place in the Distribution Plan

By OTTO G. HITCHCOCK*

BEING in any kind of business brings the responsibility of rendering a service. Service first must be a proven need for such business as an economic factor.

The manufacturer, to be of service, must make goods that are for public comfort, welfare or pleasure. Making, alone, is not enough. The product must be good, the price right, and above all the business must be well managed, to insure not only permanency but to be profitable.

Then, again, the product must be kept in line with popular or accepted demand, and, furthermore, constantly improved so as to keep in the parade with the march of progress.

So much for the production side of the picture. With the manufacture comes the problem of distribution. If the product be more or less in the field of standard, staple commodities, the individual purchases by retailers would be small, and, consequently, a high cost to cover a wide distribution.

Here the wholesaler has his place in the picture as an economic factor and, therefore, a rightful recognition in rendering service.

The wholesaler was created when men with wisdom and vision sensed this proper function in distribution. They gathered together individual staple products from the various manufacturers that would make a complete installation in any designated field. By having well assorted stocks, backed by aggressive salesmanship, the accumulated sale covering an accepted range of items to the retailer kept the cost per item at a minimum, but with satisfactory profits on the total volume of business, resulting from the diversity of material sold.

The manufacturer saw his wholesaler, kept him supplied, and felt his interests would be well served. His product was selected because the wholesaler knew the manufacturer was dependable and furnished goods he (the wholesaler) wanted. By genuine co-operation, each knew his link in this chain of distribution would be equally beneficial.

There crept into this sound economic picture subtle and disturbing forces. The manufacturer conceived something new, of real merit, but, unfortunately, the wholesaler would not stock until first the manufacturer created a demand. This forced the first step in a breaking down policy of manufacturer to wholesaler and wholesaler to retailer. How else could the manufacturer create this demand, excepting he contact the retailer, who would be quick to see the consumer value in the new device or improved product? Then, of course, it did not leave the best of feeling if the manufacturer did not sell Mr. Retailer.

The next breaking down step would be caused by some manufacturers, a little too hungry for volume and at the expense of sound selling costs, encouraging his wholesaler to permit his men to contact the retailer, but to be accompanied by the wholesaler's salesmen. This, again, would be a direct contact, manufacturer to retailer, and a double selling cost for a particular line. This would result in further loss to the wholesaler in volume sales, because of the neglected items he (the wholesaler's salesman) could have sold, but left the doors wide open for some other wholesaler to get the additional items.

The writer is sold on the economic value and soundness in the field of distribution through the wholesaler, providing the wholesaler realizes the importance of his true economic worth and proves his proper recognition by his works.

He (the wholesaler) must co-operate with the manufacturer who is loyal to him and appreciates his true function. A manufacturer who sells the wholesaler expects him to aggressively contact the retail trade.

The wholesaler who is keen to his position won't send manufacturers to see or sell the retailer, to create a certain commodity demand first. He won't need promotional men to double the cost of distribution by working with his salesmen, and neglecting selling other profit-producing items.

The forward-looking wholesaler will be as keen for improvements and new productions as his friend, the manufacturer, who engineers and creates.

Both the wholesaler and the manufacturer must keep

* Mr. Hitchcock is secretary and manager of Hays Mfg. Co., Erie, Pa.

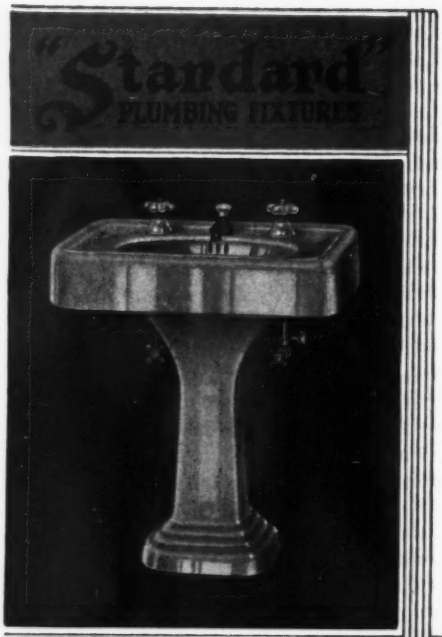
A MODERN ENSEMBLE MODERATELY PRICED

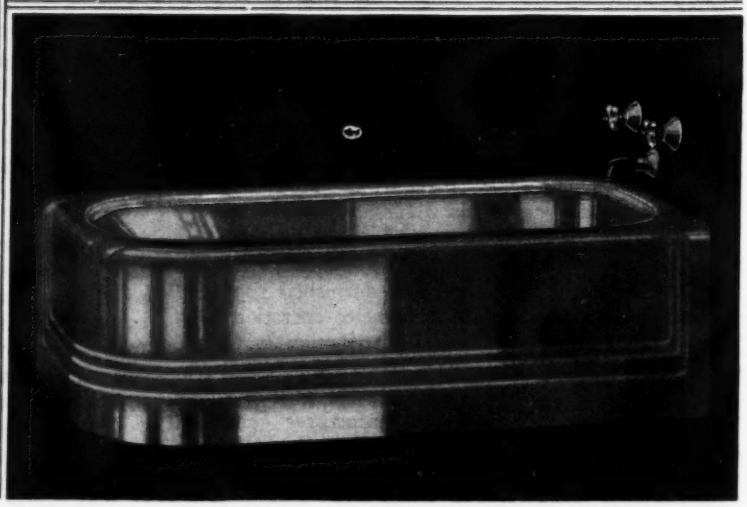
Here is a modern bathroom group to meet modern requirements for your popular priced installations—the Pembroke *Neo-Classic* bath, Laton lavatory and Modernus closet. Each unit a work of master craftsmanship . . . together an Ensemble of refreshing grace and charm.

No longer is it necessary to sacrifice modern beauty to meet the moderate budget. With this group you can make modern design meet modest prices, because they cost no more.

Show your customers the classic lines of the Pembroke *Neo-Classic* bath, the new graceful design of the popular Laton lavatory, and the distinguished straight front of the Modernus closet. Sell them as an Ensemble within reach of every home-owner.

And, remember, the first step in successful selling is an attractive display. Write today for the "Standard" plan of selling to old homes on convenient payments.





Standard Sanitary Mfg. Co.
PITTSBURGH, PA.
DIVISION OF
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

in step in this parade of distribution; then only can well intentioned motives be carried out on a sound economic basis. In this day and generation all forces must move forward with a program that is economically sound, otherwise they must fail.

Today is the time to build for a sounder tomorrow. All have their problems. Millions invested in manufacturing, and like millions in wholesaling, can only be safeguarded with a policy of live and let live. Each must serve the other efficiently and well, to conserve this background of production and distribution for continued prosperity.

The wholesaler must preserve his tradition and keep an open field where his own initiative can make secure the wholesaler link for economic distribution—Manufacturer to Wholesaler and Wholesaler to Retailer.

◆

New York Jobbers' Credit Association Plans Interesting Party

The Jobbers' Credit Association, Inc., of New York City, will hold its seventh annual dinner and dance at the Commodore Hotel, New York City, on Saturday, November 7. The committee in charge of arrangements for this year's party are planning on making it one of the most colorful and enjoyable affairs ever sponsored by the association. Several new innovations are planned that will make the party entirely different from any previous one. The following are members of the entertainment committee:

Fred J. Schill, Schill & Burford, Inc., chairman; T. W. Powers, Asco Supply Co.; J. K. O'Neil, Crane Co.; S. C. Breihof, Dimock & Fink Co.; H. C. Leavy, Sam S. Glauber, Inc.; W. A. Doncourt, W. H. Hussey & Son, Inc.; L. Sherman, E. F. Keating Co.; Samuel Levine; J. Ryan, Pierce, Butler & Pierce Mfg. Corp.; E. E. Basch, Regent Plumbers' Supply Co., Inc.; Charles Schwartz, E. Schwartz Plumbing Supply Co., Inc.; J. Reitzfeld, M. O'Neil Supply Co.; Mortimer Smolka, E. Smolka Plumbing Supply Co., and J. Weil, Weil Bros.

◆

Ontario Chapter Starts Regular Meetings

The first regular meeting of the season of the Ontario Chapter, American Society of Heating and Ventilating Engineers, was held at the Prince George hotel, on October 5. The meeting was for members only, and twenty-four were present.

Following the dinner, President H. S. Moore announced the acting chairmen for the various committees for the coming year. They are as follows: E. R. Gauley, publicity and entertainment; J. S. Wood, attendance committee; and W. R. Blackhall, membership committee.

M. F. Thomas made a report on a recent meeting held at the city hall on the question of smoke abatement in the downtown section of the city of Toronto. Mr. Thomas was the Society's representative at this meeting. Mr. Leitch read a paper from the National office entitled "A Statement of Research Activties in 1931."

Mr. Moore made a special appeal to the members to be present at the next meeting, which is to be November 10. W. H. Carrier, president of the American Society of Heating and Ventilating Engineers will be the principal speaker of the evening. The subject of his address will be "Economic Viewpoint in Air Conditioning for Human Comfort."

◆

Baker Ice Machine Co. Buys IcElect Corp.

The Baker Ice Machine Co., Inc., of Omaha, Nebr., manufacturer of ammonia refrigerating machinery, has just taken over the IcElect Corp., also of Omaha, which concern has for a number of years been manufacturing domestic and small commercial refrigerating equipment. The business of the IcElect Corp. will be carried on by the new IcElect division of the Baker Co.

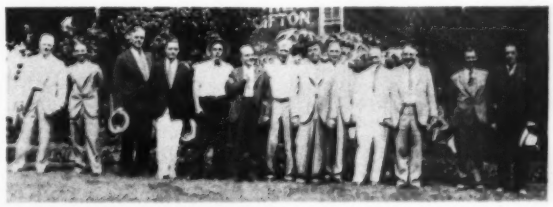
The Baker Ice Machine Co. was organized in 1905. Officers are J. L. Baker, president; C. A. Baker and Charles Knox, vice presidents; F. J. Vette, secretary; and R. L. Baker, treasurer. The IcElect Corp. was founded in 1922. Albert J. Schneider, one of the founders of the corporation, remains with the Baker Ice Machine Co. as head of the engineering activities of the IcElect division.

◆

Welding Section, N. E. M. A., Guests of USL Battery Corp. at Meeting

Representatives of many electric welder manufacturers were guests of the electric arc welding division of USL Battery Corp. at Niagara Falls, N. Y., at a recent meeting of the Welding Section of the National Electrical Manufacturers Association.

The business sessions, which were held at the Clifton hotel, Niagara Falls, Canada, were devoted entirely to an informal discussion of developments within the industry. The subjects covered included standard ratings of machines and the new Welding Manual, which will describe various applications of electric welding. Each manufacturer is contributing a share of the material for this manual.



Left to right: Jack Amos, Hollup Corp.; F. E. Hall, USL Battery Corp.; J. F. Lincoln, Lincoln Electric Co.; L. P. Hume, General Electric Co.; C. J. Holslag, Electric Arc Cutting & Welding Co.; E. W. Kronbach, Una Welding & Bonding Co.; W. W. Reddie, Westinghouse Electric & Mfg. Co.; L. D. Meeker, General Electric Co.; D. H. Kelly, USL Battery Corp.; E. D. Bransome, Wilson Welder & Metals Co.; A. A. MacLean, USL Battery Corp.; O. F. Stroman, Westinghouse Electric & Mfg. Co.; J. L. Fosnight, USL Battery Corp.

Golf tournaments were enjoyed both days of the meeting, at the Niagara Falls Country Club at Lewiston Heights and the Lookout Point Country Club of Fonthill, Ont. A banquet at the Clifton hotel the evening of the 19th concluded an enjoyable and profitable two-day meeting.

A. A. McLean, vice president of USL Battery Corp., and J. L. Fosnight, sales manager electric arc welding division, were in charge of arrangements.

Westinghouse Co. Re-organizes Industrial Sales Department

To better serve the electrical requirements of various industries, the industrial sales department of the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has been re-organized under the direction of O. F. Stroman, industrial sales manager. The re-organized department is composed of units grouped according to the main classifications of industry.

Two assistant sales managers and 14 divisional managers have been appointed and the new organization also provides for the grouping of specialized engineers with every sales division. Bernard Lester and C. B. Stainback are the two newly appointed assistant sales managers.

◆

Death of H. Allen Faust

H. Allen Faust, representative in Philadelphia, Pa., for the Bridgeport Brass Co., of Bridgeport, Conn., died at his home in Bridgeton, N. J., on October 3, as the result of a heart attack. He had been in poor health for the past two years. Mr. Faust had been associated with the Bridgeport Brass Co. for approximately ten years and was well known in the industry. Funeral services were held from the home. Surviving are the widow and a daughter.

Business Personals

LaMonte J. Belnap has been elected chairman of the executive committee of the Worthington Pump and Machinery Corp., New York City, by the board of directors of the corporation. Harry C. Beaver, formerly vice president of the corporation, succeeds Mr. Belnap as president of the organization; as chairman of the executive committee, Mr. Belnap maintains his active part in directing the manufacturing, sales and financial activities of the Worthington firm. He also is president of the Consolidated Papers Corp., Ltd. Mr. Beaver, newly elected president, has been associated with Mr. Belnap in various enterprises for the past twenty-five years.

H. C. Beaver

L. J. Belnap

Raymond E. Jones, former president of Haynes Selling Co., Inc., has become associated with William G. R. Braemer of Philadelphia, Pa., air conditioning engineer, for the engineering and sale of the line of air conditioning apparatus manufactured by the Niagara Blower Co., of Buffalo, N. Y. He will cover the Philadelphia territory, with headquarters in the Lafayette building, 5th and Chestnut streets.

Alfred Christie has been appointed to the sales force of the Spencer Heater Co. of Williamsport, Pa., in the New England territory. He will operate under the supervision of E. A. MacDonald, who is manager for the company in that district. Mr. Christie has been identified with the heating industry in the Boston area for more than a decade and will cover the metropolitan Boston territory in his new connection. For the past eight years he has been associated with Homer C. Perkins of Boston, and previous to that was with the Grinnell Co. and B. F. Sturtevant Co.

W. H. Stanton has been appointed manager of sales and distribution for the Ohio Rubber Co., of Cleveland, Ohio. He was previously connected with the U. S. Rubber Co. as manager of plumbing specialties. Mr. Stanton has a wide acquaintanceship in the plumbing industry, and in his new capacity will continue his service contacts with manufacturers and wholesalers of plumbing fixtures.

Harold A. Cross has joined the sales force of J. B. Wise, Inc., of Watertown, N. Y., and will be located in the company's Western sales office, 1213 Steger building, Chicago, Ill. Mr. Cross was formerly assistant manager of plumbing sales for the Chase Brass & Copper Co., of Waterbury, Conn., with headquarters in the company's Chicago office. Prior to that he represented the U. S. Sanitary Mfg. Co., of Pittsburgh, Pa., in Chicago and the Middle West for a number of years.

Harold A. Cross

E. I. Hodgkins and J. L. Hodgkins, both of whom were formerly associated with the Interstate Plumbing Supply Co., of Albany, N. Y., have joined Hoy & Co., Inc., plumbing and heating supply house of Albany. They were two of the original incorporators of the Interstate Plumbing Supply Co. E. I. Hodgkins held the office of treasurer and J. L. Hodgkins the office of vice president in the Interstate company.

Walter M. Cross, general manager of Coal-O-Matic Co., Inc., Kansas City, Mo., suffered severe head injuries recently when he was slugged and robbed when putting his motor car away for the night near his home.

EXCESS WEIGHT IS USELESS--

WHY drive a tack with a sledge hammer? Foolish thought, isn't it? But it really isn't any more foolish than paying for ponderously heavy unions when you can buy Branfords.

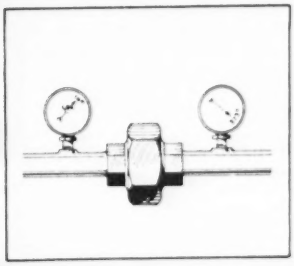
The excess weight is useless as far as service, dependability, leakproofness and shockproofness are concerned. Branford 250 and 350 lb. Unions have proven this conclusively. They have solved the problem of paying for useless weight.

THIS Temperature Test also included four other leading brands of unions. Documentary proof of these tests may be had upon written request.

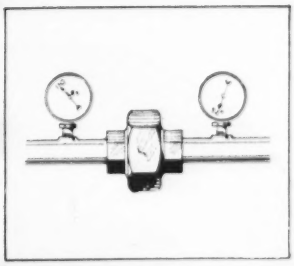
MIF

MALLEABLE IRON FITTINGS CO.
BRANFORD CONN.

.....M.I.F.....
Presents
BRANFORD Sr. & Jr.
UNIONS
in
A TEMPERATURE TEST
Directed by
Prof. James Holt
Mass.Inst. Tech.



THIS VIEW SHOWS A BRANFORD UNION UNDER A TEMPERATURE TEST OF 373°F. AT 165 LBS.PRESSURE.



THE SAME UNION A FEW MINUTES LATER UNDER 32°F. AT 110 LBS.PRESSURE.

TRY ONE ON YOUR NEXT JOB

Plumbing, Heating and Air Conditioning Studied by Home Building Conference

Among the special fields to be studied by the Conference on Home Building and Home Ownership, which has been called by President Hoover to convene in Washington, D. C., December 2 to 5, are heating, lighting, plumbing, ventilation and air conditioning. This work will be under the direction of the Committee on Fundamental Equipment. Subdivision No. 1 of this committee includes the following: Prof. A. C. Willard, Urbana, Ill., chairman; W. H. Driscoll, New York City; Philip Drinker, Boston, Mass.; and Perry West, Newark, N. J. The committee submitted a preliminary report in Washington on October 8.

◆

Will Manufacture Heating Boilers

Oscar Thomsen, for many years president of the Oscar Thomsen Plumbing and Heating Co., contracting firm of Greenwich, Conn., has retired from that business to enter the boiler manufacturing business at Flemmington, N. J. The new firm will be known as the Foran Boiler Co.

The plumbing and heating business in Greenwich will be carried on by a new company of which Oscar O. Thomsen, a son, is president. A. P. Mazza is vice president, Merion G. Thomsen, secretary, and Eric H. Jensen, treasurer. With the formation of the new company quarters were changed from 68 Lewis street to 52 Lewis street. An old residence has been converted into modern business offices, showroom, stockrooms and shops.

Pittsburgh Chapter Hears President Carrier

The Pittsburgh Chapter, American Society of Heating and Ventilating Engineers held its first meeting of the season on October 5, at the Keystone Athletic club. The principal speaker of the evening was W. H. Carrier, National president of the Society and chairman of the board of directors of the Carrier Engineering Corp., Newark, N. J. His subject was "Servicing the Human Power Plant."

◆

Death of Edgar R. Hawley

Edgar R. Hawley, president of the Hawley-Richardson-Williams Company of Salt Lake City, Utah, and a prominent heating and ventilating engineer of the west, died recently of acute pneumonia, following a week's illness. He was born October 12, 1887, in South Bend, Ind. While still very young his parents moved to Marshalltown, where he spent his early manhood as a machinist and draftsman. He later entered the employ of the C. A. Dunham Co., of Chicago, at its Marshalltown plant. In 1910 he came to Salt Lake City as a representative of this company and became associated with Thomas A. Williams. In March, 1919, Mr. Hawley joined with Henry G. Richardson and Gilbert W. Williams in the incorporation of the firm of which he was president at the time of his death.

As consulting engineer for many of the leading architects of the west, he designed the heating and ventilating systems for a number of large buildings, including the state capitols of both Utah and Idaho. He is survived by his widow and two children.

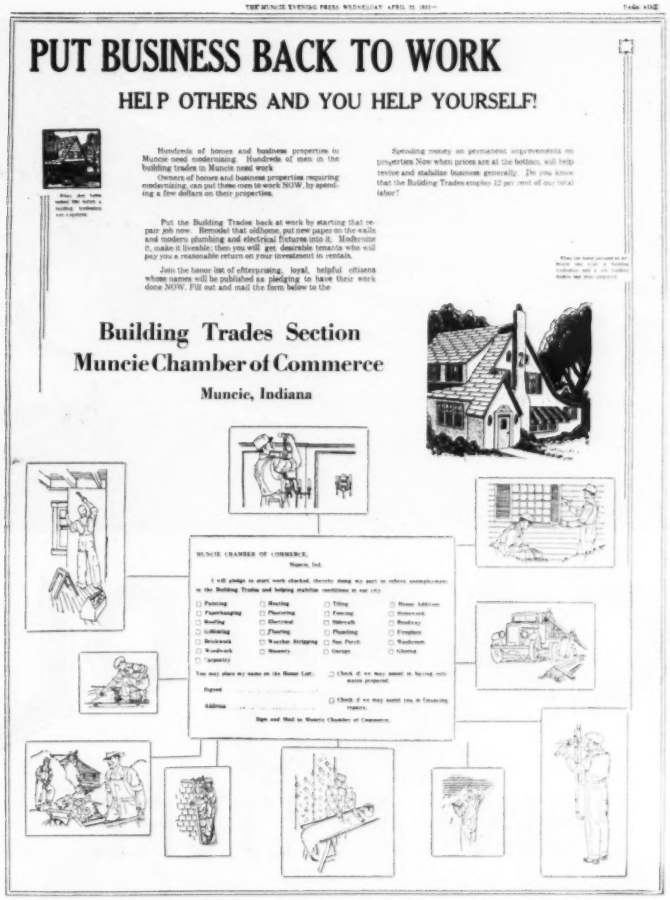
Kennedy Brass Fittings

THESE fittings, made of the same tough, strong metal that is used for Kennedy Bronze Valves, provide an insurance against pipe fitting troubles at no extra cost to you. Each fitting is individually tested by air pressure under water before leaving the factory so that you can depend upon body and threads being thoroughly leakproof. Their precision automatic machine work further assures clean-cut, accurately aligned and correctly formed threads which enable your fitters and machinists to obtain tight joints at the first make-up. The attractive design of these fittings and their uniformity of color with that of high grade bronze piping, make these fittings worthy of your finest installations, and their reasonable price permits you to use them even on jobs where you must figure closely. The large Kennedy line includes a type and size for every requirement on plumbing and heating jobs. Order Kennedy Bronze Fittings from your dealer for your next job and try out their many advantages to your own satisfaction.

Send for the Kennedy Catalog

The Kennedy Valve Mfg. Co.
Elmira, N. Y.
Branches in principal cities

KENNEDY
VALVES-PIPE FITTINGS-FIRE HYDRANTS



PUT BUSINESS BACK TO WORK

HELP OTHERS AND YOU HELP YOURSELF!

Hundreds of homes and business properties in Muncie need modernizing. Hundreds of men in the building trades in Muncie need work

Owners of homes and business properties requiring modernizing, can put these men to work NOW, by spending a few dollars on their properties.

Spending money on permanent improvements on properties Now when prices are at the bottom, will help revive and stabilize business generally. Do you know that the Building Trades employ 22 per cent of our total labor?

Put the Building Trades back at work by starting that repair job now. Remodel that oldhome, put new paper on the walls and modern plumbing and electrical fixtures into it. Modernize it, make it liveable; then you will get desirable tenants who will pay you a reasonable return on your investment in rentals.

Join the honor list of eNterprising, loyal, helpful citizens whose names will be published as pledging to have their work done NOW. Fill out and mail the form below to the

Building Trades Section
Muncie Chamber of Commerce
Muncie, Indiana

MUNCIE CHAMBER OF COMMERCE,
Muncie, Ind.

I will pledge to start work checked, thereby doing my part to relieve unemployment in the Building Trades and helping stabilize conditions in our city.

☐ Painting	☐ Roofing	☐ Tiling	☐ Home Addition
☐ Paperhanging	☐ Plastering	☐ Fencing	☐ Stonework
☐ Roofing	☐ Electrical	☐ Sidewalk	☐ Roadway
☐ Glazing	☐ Flooring	☐ Plumbing	☐ Fireplace
☐ Brickwork	☐ Weather Stripping	☐ Sun Porch	☐ Sunroom
☐ Woodwork	☐ Masonry	☐ Garage	☐ Glazing
☐ Carpentry			

You may place my name on the Home List. ☐ Check if we may assist in having estimates prepared.

Signed .....

Address .....

☐ Check if we may assist you in financing repairs.

Sign and Mail to Muncie Chamber of Commerce.

This ad shows the main appeal made during the campaign—to put business "back to work"

Community Modernizing Program Is Successful

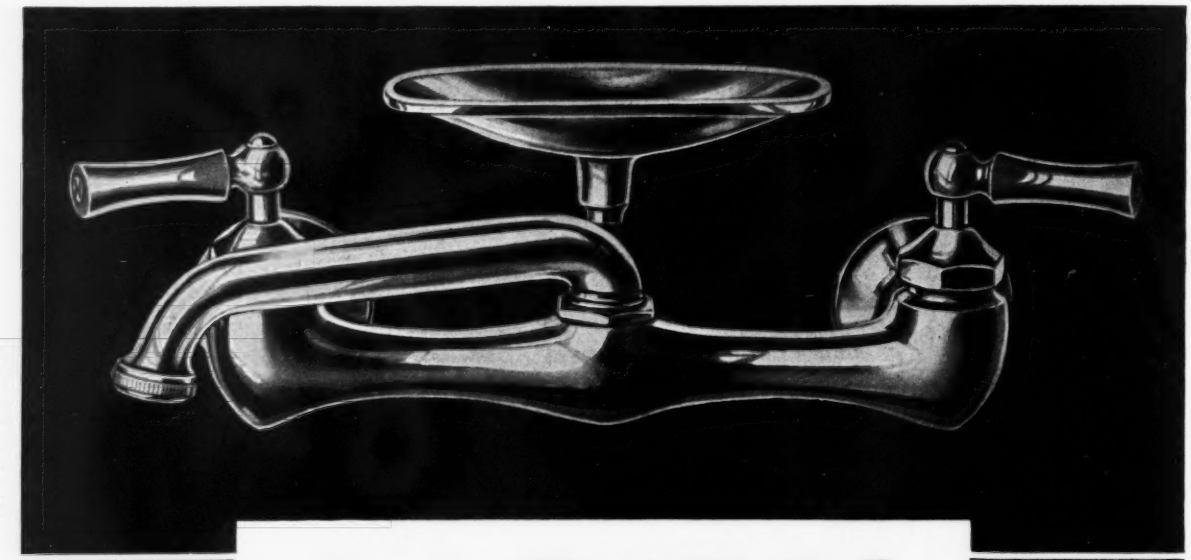
Muncie, Ind., remodeling campaign brings in 114 jobs in first week. Plumbing and heating men are leaders

THE plumbing and heating industry in Muncie, Ind., can claim great credit for the success of the modernization movement started there earlier in the year. W. E. Price, president of the Knapp Supply Co. of that city, was made chairman of the building trades section of the Muncie Chamber of Commerce. His vice-chairman was Victor Hutzel of Hutzel & Company, a plumbing and heating contracting firm.

In reporting on the campaign a little more than two months after it had been opened, Mr. Knapp said that, while only eighteen per cent of the men in the building trades in Muncie were employed at the beginning of the movement, at least seventy per cent were working at the time of his report.

Getting Things Started

In less than one week's time 114 remodeling projects had been undertaken. Every day for a month word was



CAPITOL 910 SINK FIXTURE

For homes where only the best will do, or where the housewife takes a particular pride in dressing up her kitchen, this Capitol Sink Fixture is, we believe, the handsomest and finest-built fixture anywhere obtainable.

Chrome-plated throughout, the soap dish and handles are also of metal. Or, at your option, china soap dish and china handles can be furnished.

Eight-inch centers with either female eccentric or male adjustable couplings. Especially suited to the new, low-backed sinks.

Made in plants where precision workmanship is the only kind tolerated, this fixture is as finely made as the most modern industrial methods enable. It is an aristocrat in its field.

The better plumbing supply houses throughout the country display and furnish Capitol fixtures.

Bohn Aluminum & Brass Corporation

CAPITOL BRASS DIVISION

MANUFACTURERS OF BRASS VALVES, BOILER TRIMMINGS AND PLUMBERS' BRASS GOODS

DETROIT~MICHIGAN

received from at least one citizen of Muncie that a job of some sort was being started in order to help out the campaign. This backing came as a result of the effective newspaper advertising campaign which was financed by contributions from members of the building trade.

We reproduce four of the advertisements with this article, as showing just how the campaign was handled. It set forth the reasons for the movement, some of the advertisements gave readers a list of possible jobs which might be checked in deciding what that reader might have done in order to help the campaign along. Another advertisement carried pictures of twenty-five remodeling jobs in progress, as proof that the movement was "catching on."

The city was kept advised through the columns of the newspapers as to the success of the campaign; which, in turn, gave good reason to those who hesitated to have jobs started in their own property. The community was urged to remodel not only residential property, but business property. And some of the advertisements carried lists of those in the trade who were supporting the campaign.

Here is what Mr. Price has to say about the campaign and its success:

"This plan was primarily evolved for the purpose of aiding unemployment. While it is true that the men who supported this campaign financially expected to profit by the campaign directly, the chief purpose was to give employment to as many local artisans as possible. In line with that purpose we urged people through newspaper advertising, through addresses before local luncheon clubs, and by a mass meeting, to modernize or repair homes which were badly in need of improvements. We also urged our local building and loan associations to give the preference to repair jobs instead of new building.

"While this did not result in as great a turnover of materials as a building campaign might have obtained, yet it did give employment to a great number of men and, of course, every supply dealer in the city profited to a greater or lesser extent depending on their own activities in following up the campaign.

Unemployment Lessened by Campaign

"In our appeal for financial support we only solicited companies and organizations who were allied to the building industry and made no appeal whatever to the merchants or public in general not connected with the industry.

"While we have no means of knowing the exact amount of money paid out for labor and materials as a result of this campaign, we do know from a number of people reporting improvements which they are making as a direct result of the campaign that our activities helped very materially in lessening unemployment in Muncie. Had this same campaign been put on in every city in the state of Indiana, then we would have seen some real results, as many laborers came from outside Muncie attracted by our activities.

"In our own particular business, will say that we secured some volume from people who told us that they were making their modernizing effort because of our activities in the movement. The plumbing and heating fraternity in Muncie perhaps more actively supported the movement than any other other branch of the industry. Not only was their industry recognized in that the writer was made chairman of the Building Trades Section of the Chamber of Commerce, but Mr. Victor Hutzel, of the plumbing and heating firm of Hutzel & Company, was vice-chairman and was very active in the campaign.

"We do not claim

MODERNIZE
YOUR HOME
for the
Charm of
HOSPITALITY
The modern home speaks individuality in every line and detail. No longer is the cold, rigid effect approved inside or out. Gracefulness and personality predominate carpentering, decorations, plumbing, electrical fixtures, etc., to such an extent that their lack is instantly noticeable in comparison with the other modern homes about it.
Modern beauty is definite—a creation of studied and experienced minds and hands. It is different and delightful—a necessary part of our modern lives.
Skillful Modernizing Adds Untold Beauty
Inexpensive Beauty Treatments for Homes
THE FOLLOWING PROGRESSIVE FIRMS ARE SPONSORING THIS HOME MODERNIZING PROGRAM
BUILDING TRADES SECTION
MUNCIE CHAMBER OF COMMERCE
Phones 284 and 5848

Here the possibility of adding charm to the existing home was the selling point

any particular credit for working out a campaign of this kind. As a matter of fact, this movement seemed so logical that we cannot understand why similar movements have not been initiated in every community in the country. Probably our own condition, so far as unemployment among the different crafts, was so desperate that we saw the need of this activity sooner than some of our more fortunate communities.

"While we do not claim that this plan will result in immediate revival of business, we do claim that if a movement is given some attention from those interested in the building industry and receives support and encouragement from our financial institutions that it will help us very materially upon our way back to a revival of business prosperity."

Following is the program issued by the Muncie Chamber of Commerce, laying down the general plan to be followed:

Program of the Building Trades Section of the Muncie Chamber of Commerce was started about April 15th, 1931, by raising approximately $2,000.00 to finance a campaign of advertising and publicity.

The following, generally speaking, is the outline of the plan for modernization followed by the Section in its work to date:

1. Page and half page advertisements in the two local daily papers and one weekly paper.
2. Newspaper stories about the campaign, including cuts of fund subscribers and various other backers of the campaign.

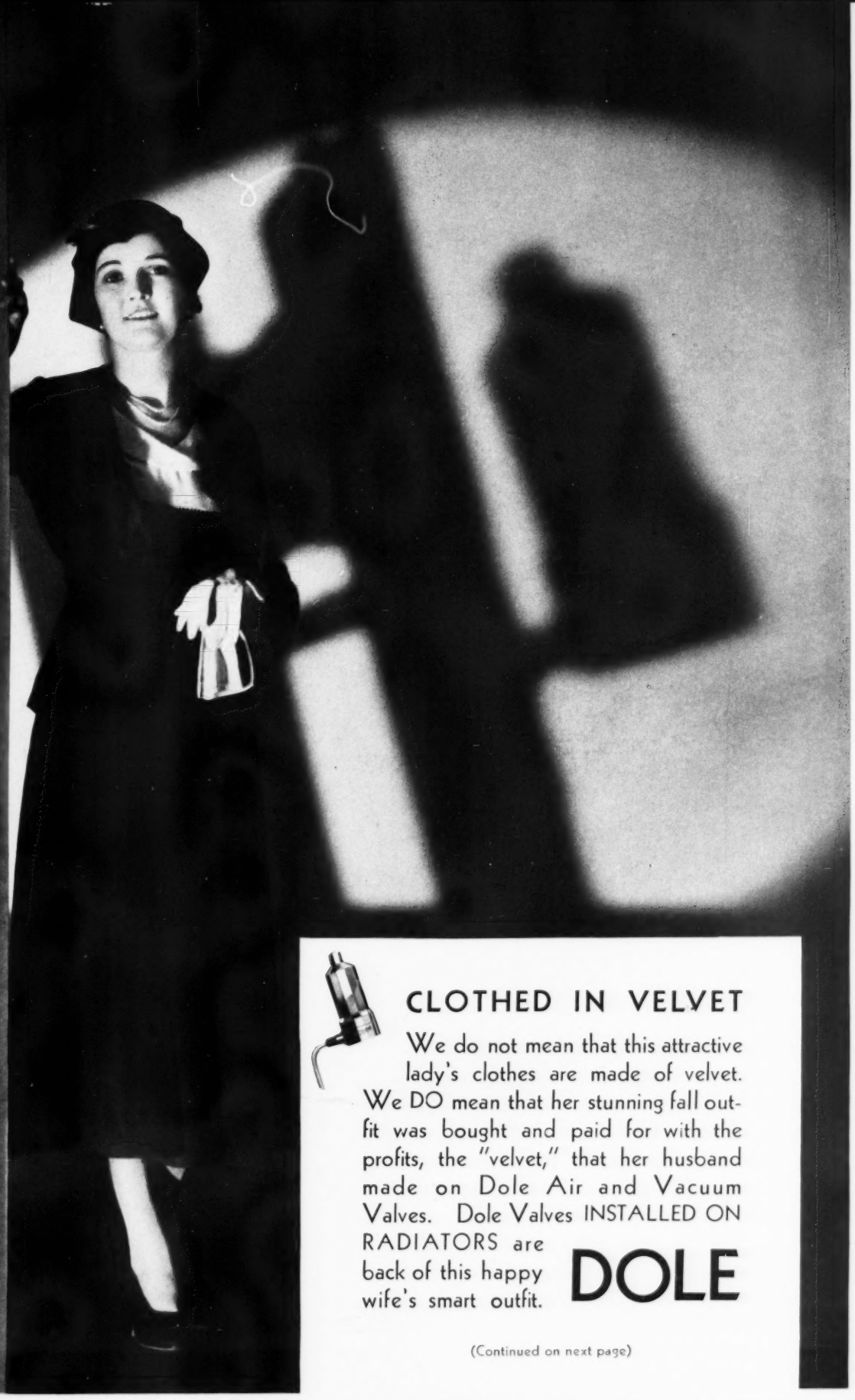
YOU Can Help
Put Thousands of Men to Work NOW
Thousands of homes and business properties in Muncie need modernizing. Hundreds of men in Muncie need work--they do not want charity--owners of homes and business properties requiring modernizing can put these men to work NOW, by spending a few dollars on their properties.
Spending money on permanent improvements on properties Now when prices are at the bottom, will help revive and stabilize business generally. Do you know that the Building Trades employ 12 per cent of our total labor?
Put the Building Trades back at work by starting that repair job now. Remodel that old home, put new paper on the walls and modern plumbing and electrical fixtures into it. Modernize it, make it liveable; then you will get desirable tenants who will pay you a reasonable return on your investment in rentals.
Will YOU do YOUR part? Sure YOU will; loyal citizens of Muncie always do. Join the honor list of enterprising, loyal, helpful citizens whose names we will publish as pledging to have their work done NOW Fill out and mail the form below to the
Building Trades Section
Muncie Chamber of Commerce
Muncie, Ind.
Give YOUR HOME a Beauty Treatment
For... Increased Value MODERNIZE

These two ads on this page stress the "help business" idea, and the idea of keeping the home in repair

3. Letters to one thousand property owners owning property which, in the opinion of the committee, should be modernized, and where it was known that the owner had or could get the funds to modernize.
4. Talks over the local broadcasting station.
5. Sermons by local ministers on the subject of modernizing, city beautification and the employment of artisans and laborers.
6. Discussing the subject of modernization with all telephone subscribers, thus securing valuable information as to ownership of structures and possibilities of modernizing.
7. Annual spring dinner given in honor of building industry with 750 present.
8. Discussion of modernization before all civic and quasi-civic clubs of the city.

Noticeably good results have been attained and a reduction of general unemployment has ensued. It is estimated that several hundred thousand dollars have already been spent in modernization in Muncie. The plan will be continued constantly.

It Costs Less
To Keep Your Home Always in Repair
Start Modernizing Your Home or Business Block Now!
Partial List of Subscribers
Steps left unpainted, shutters left blowing in the wind, a leaky roof left to the mercy of the elements ... these things cost you money with every day that passes. A simple repair neglected is usually the source of considerable inconvenience and expense in the end. Time, weather and wear invariably multiply the seriousness of the initial damage.
Now is the time to put your house in good repair. You profit by present low prices ... you save the added expense of further damage ... and you give additional employment in your own community.
Check your house over from top to bottom ... the roofing, the paint, the gutters and rain spouts, the shutters, the screens, the doors, the foundation, the porch deck, the wall paper, the woodwork, the floors, the plumbing, the heating system, the chimneys. Repair all those things that need it ... add weatherstripping and insulation, repaint and reroof. Put your house in good sound condition now ... and remember, it costs less to keep it always in good repair
Join the honor list of enterprising, loyal, helpful citizens whose names will be published as pledging to have their work done now
Building Trades Section
MUNCIE CHAMBER OF COMMERCE
Phone 284 or 5248



CLOTHED IN VELVET

We do not mean that this attractive lady's clothes are made of velvet. We DO mean that her stunning fall outfit was bought and paid for with the profits, the "velvet," that her husband made on Dole Air and Vacuum Valves. Dole Valves INSTALLED ON RADIATORS are back of this happy wife's smart outfit.

DOLE

(Continued on next page)

(Continued from the other side)

By installing Dole Air and Vacuum Valves you can make the extra money that brings many new pleasures within your reach.

There is real profit to be made and good-will can be built by recommending and installing Dole Valves. No time is wasted on return trips to make adjustments. Every one-pipe steam system is a prospect for a good modernizing and replacement job with Dole Syphon Air Valves or Dole Vacuum Valves No. 2-B.

Have each journeyman carry two or three Dole Valves as part of his kit. Put a couple in your own pocket when you go out to look over a job. It is surprising how many opportunities there are to install Dole Vacuum Valves—to make yourself an extra income, to earn "velvet." Write for Dole Valve folders imprinted free with your name.

THE DOLE VALVE COMPANY

1913-1933 CARROLL AVENUE
CHICAGO, ILLINOIS, U. S. A.

» »

Trade Golf Events

E. T. G. A. Plays Woodmere Course

A special meet of the Eastern Trade Golf Association was held October 6th, over the Woodmere club, Woodmere, Long Island, N. Y. Harold Townsend, Edward Bauman, W. H. Driscoll and S. J. Geoghegan donated the prizes for the day.

The day was ideal and, as the scores indicate, competition was keen. D. M. Forgan and A. C. Lieblang were guests.

The scores for the day follow:

	G.	H.	N.		G.	H.	N.
S. C. Carrier.....	81	8	73	T. Kellogg	77	8	69
J. B. Garfield....	75	6	69	E. H. Page.....	88	..	..
H. J. Reeves.....	84	10	74	R. A. Wolff.....	83	12	71
John Kjerner ...	77	2	75	F. A. Murray....	83	10	73
Harold Townsend	88	12	76	H. P. Bartlett...	98	22	76
V. J. Cucci.....105		23	82	E. H. Ruppert...115		36	79
W. L. Fleisher...	95	24	71	L. M. O'Neil.....	82	12	70
N. A. Cordner....111		32	79	Jack Barnum ...108		36	72
A. F. Hinrichsen.	86	20	66	T. O'Donnell 110		30	80
G. R. Galbraith..	86	16	70	John Weil	93	21	72
A. Engle	85	18	67	W. H. Staples....	86	18	68
J. C. McDonald..	87	20	67	W. H. Murphy...	94	28	66
E. F. Keating....	85	7	78	S. J. Geoghegan..	87	8	79

The following won prizes in the order named: A. Engle, W. H. Staples, J. C. McDonald, A. F. Hinrichsen, W. H. Murphy, J. B. Garfield, T. Kellogg, L. M. O'Neil, G. R. Galbraith, R. A. Wolff, W. L. Fleisher, John Weil and J. Barnum.

◆

San Francisco Trade Group Plays Ingleside Course

Members of the golfing section of the Plumbing and Heating Club of San Francisco, Calif., and the Bay Cities were drawn to the Ingleside course, situated in the southern environs of the Golden Gate city, for their September tournament, when representatives from all three branches of the industry unlimbered their clubs on Thursday, the 24th.

Some excellent driving was done by E. Heieck, J. W. Forsythe, Emile Heymans and Thomas Mixter, while the putting of F. F. Elliott, F. M. Gabbert, Robert Allmon and Walter Judson was equally good. Among those turning in birdies were Allmon, Elliott and Rowe.

This tournament will go down in San Francisco trade golf history as "play-off day." When the cards were footed up after the eighteenth hole, a three-way tie developed between W. H. Rainwater, F. F. Elliott and W. A. Rowe, each having shot a net 68. Honors in B division went to Ross M. Clark with a 95-21-74 tally, while C class laurels went to C. F. Ceaser, who shot a 93-27-66. Mr. Ceaser was also awarded custody of the C. F. Church Mfg. Co.'s silver trophy for the current month for having turned in the lowest net score.

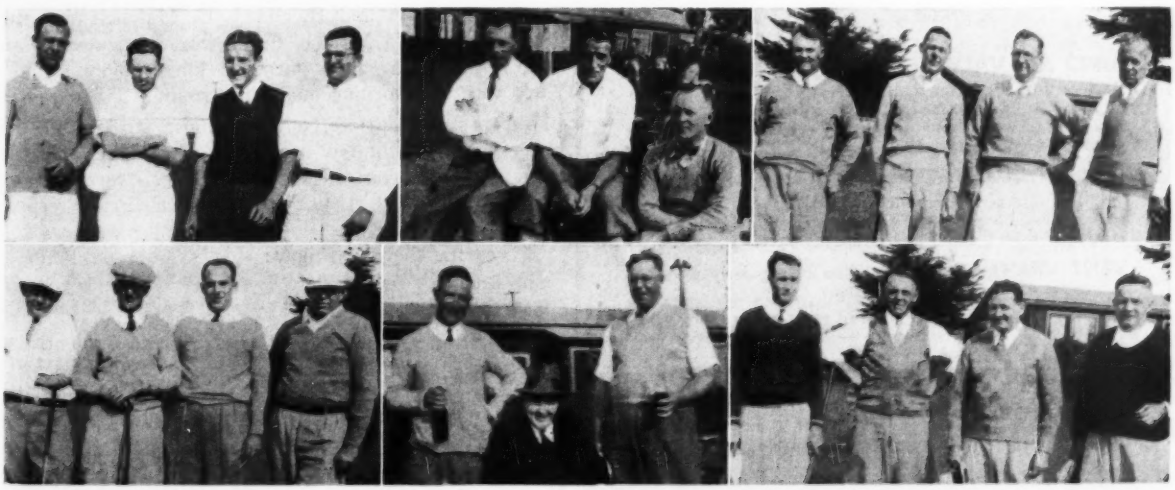
In an effort to determine the Class A winner, Rainwater, Elliott and Rowe agreed to play three extra holes. Still the score was even-up; and it remained even-up following the next three holes. But on the seventh extra hole the decision went to Mr. Rainwater.

The second play-off, made necessary as the result of the pre-vacation tournament in June, when Finch, Forsythe and Gabbert tied for B class honors, was decided in favor of Mr. Gabbert, who carded 94-18-76.

◆

Western Trade Closes Season; Dickerson Wins Association Championship

Fifty-one members and guests closed the Western Trade Golf Association's season on October 8 at Rolling Green Country club, secured through the courtesy of T. H. Monaghan, past president of the association. Great excitement attended the three-cornered fight for the championship of the association. George Dickerson, W. A. Taylor and E. W. Rietz had made their way to the finals over some stiff competition throughout the



Top row, left to right: C. F. Ceaser, E. Heieck, H. Buell, Walter Judson, Emile Heymans, T. Mixter, J. J. McLeod, Don. L. O'Hair, F. F. Elliott, B. F. Blair and Ross M. Clark. Bottom row: Robert Allmon, William A. Rowe, H. K. Browning, F. A. Rikard, W. R. Pearce, H. Sales, Frank A. Mosher, W. H. Rainwater, H. W. Finch, J. W. Forsythe and F. M. Gabbert. Photos taken at golf tournament of Plumbing and Heating Club of San Francisco, Calif., held recently at the Ingleside Golf Club

Investigate Arco Radiatherm
AUTOMATIC RADIATOR CONTROL

Protect your customers with
GOOD VALVES

The satisfaction of your heating installations depends on the valves you use. So take no chances with cheap valves when it costs but a few cents more to use dependable ARCO Packless Valves.

ARCO PACKLESS VALVES

Arco Packless Valves cannot leak. They open with one smooth turn and never stick. No repacking required and they last indefinitely. Add less than the expense of one return complaint trip to the cost of an average house installation.

Use No. 999 for steam; No. 901 for water

AIRID AIR VALVES
Replace worn air valves with Airids. Use them on new jobs. No. 500 for steam; No. 510 Vac-Airid for vacuum. Airid Air Valves will free you from service complaints!

IN-AIRID AIR VALVES
The Invisible air valve which fits *inside* the radiator. No. 1 for steam; No. 2 for vacuum. In-Airids vent all the air from the new type steam radiators.

VENT VALVES A complete line of popularly priced valves for venting mains and risers.

No. 815 IDEAL QUICK VENT (3/4 in.)
No. 820 IDEAL QUICK VENT (3/8 in.)
No. 821 IDEAL FLOAT QUICK VENT (3/4 in.)
No. 822 IDEAL VAC VENT (3/4 in. for Vacuum)

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40 WEST 40TH STREET, NEW YORK
Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

ARCO ACCESSORIES MAKE ANY HEATING PLANT BETTER

Top row, left to right: G. E. Tebbetts, first in Classes A and B; J. J. O'Shea, president of the association; R. J. Flanagan, Kennedy Valve & Mfg. Co.; R. Cooper, Jr., General Electric Co. Second row: H. F. Doerr, architect; W. T. Walters, Illinois Engineering Co., J. J. Philippi, Johnson Service Co.; W. H. Meyst, Heggie-Simplex Boiler Co. Bottom row: E. Ashby; E. W. Rietz, Powers Regulator Co.; Peter M. Munn, secretary, Plumbing Contractors' Association of Chicago, winner in Class D; Frank B. Hackett, Brunswick-Balke-Collender Co., winner of morning round; C. W. Johnson, treasurer of the association. Photos taken at the monthly tournament of the Western Trade Golf Association, held at Calumet Country Club

season, and Dickerson sank a forty-foot putt for a birdie on the seventeenth hole to win the match and the championship, the prize for which was a silver coffee set. Taylor was runner-up and was awarded a traveling bag.

The final round of the consolation match was also played off, between W. H. Meyst and R. J. Flanagan. Meyst won, and his prize was a silver shaker and pitcher. Flanagan received a poker set for being runner-up.

In the day's events, W. P. McFarland won the association cup and first in class D. G. E. Tebbetts was first in classes A and B, and J. C. Matchett was the best in class C. Morton Frost won the guest prize, and T. H. Monagahan garnered blind bogey. J. P. Kiely won the morning qualifying round.

Three special prizes, one for most strokes on the water hole, one for low net on six blind holes and the other for best score on the par 3 holes, were won by H. W. Mollison, J. J. O'Shea and C. E. Price, respectively.

Scores for the day follow:

Player	G.	H.	N.	Player	G.	H.	N.
George Dickerson	94	20	74	W. T. Walters...	103	20	83
E. W. Rietz.....	114	25	89	L. J. Pitcher.....	87	8	79
W. A. Taylor.....	96	16	80	C. E. Barrows...	110	25	85
*W. A. Brayton..	105	..	..	M. G. Henderson.	92	17	75
J. C. Matchett...	93	20	73	J. E. Walsh.....	102	23	79
H. W. Mollison..	97	20	77	*C. L. Wilkins...	88	..	..
J. J. Philippi....	98	16	82	T. H. Monaghan.	111	30	81
E. F. Smith.....	94	14	80	*F. D. Chase.....	122	..	..
R. M. Stackhouse.	103	20	83	*W. M. Mauer....	102	..	..
E. J. Gossett.....	103	25	78	*Larry Dwyer ...	93	..	..
*E. S. Thomson..	101	..	..	*Morton Frost ..	81	..	..
D. M. Cooper, Jr..	111	26	85	*W. Dickson	131	..	..
J. H. Milliken....	87	10	77	O. H. Theleen...	101	14	87
E. C. Welch.....	94	14	80	*John Howatt ..	92	..	..
*C. T. Davis.....	94	..	..	J. H. O'Brien....	91	17	74

	G.	H.	N.
W. V. Hoier	107	29	78
J. P. Kiely	80	5	75
C. Thumm	99	21	78
W. Thumm	104	23	81
F. C. Staples	103	20	83
J. J. O'Shea	94	19	75
C. E. Price	97	18	79
G. E. Tebbetts	88	15	73
*T. C. Arndt	106	..	..
R. J. Flanagan	104	19	85
W. H. Meyst	86	11	75
L. T. Braun	100	17	83
C. W. Johnson	101	25	76
W. H. Lotts	90	14	76
F. C. Paschen	96	16	80
R. M. Getschow	98	25	73
W. P. McFarland	102	30	72
*R. J. Weber	121	..	..
P. M. Munn	106	27	79
*J. Fettes	121	..	..
W. R. Brookman	120	30	90

* Guest.

◆

N. E. Metal Products Golfers Will Meet Oct. 22

The next meeting of the New England Metal Products Golf Association will be held at the Albermarle Golf club, West Newton, Mass., on Thursday, October 22. The association will be the guest of John G. Ross, district manager of the Reading Iron Co., Boston office.

◆

Metropolitan Trade Golfers Play Wingfoot Course

A. W. Hale and T. Larkin were the hosts to the Metropolitan Trade Golf Association at the Wingfoot Country club, Mamaroneck, N. Y., at the October meet on the 6th. Wingfoot is one of the championship courses of the country, Bobby Jones having won the National Open Championship there.

In spite of the difficulties, some mighty fine scores were carded. Best eighteen holes were counted for prizes. Play was over both the east and west courses.

The guests, W. H. Pinkham, N. Moneypenny and R. Nichols, tied for the guest prize. It was awarded to Mr. Nichols. The following were awarded prizes, in the order named: .

L. S. Rothwell, W. C. Hallett, H. Garrity, G. W. Hamill, T. A. Johnson, J. Woods, W. T. Gilmour, J. H. Davis, C. Wall, E. D. Winslow, K. S. Roberts, R. Williams, C. Henzel, C. P. Gabosch, C. S. Coleman, E. F. Conroy, F. Allen, H. P. Heil and A. W. Hale.

Following are the individual scores:

	G.	H.	N.
H. P. Heil	122	30	92
J. H. Davis	101	22	79
W. C. Hallett	101	35	66
C. P. Gabosch	99	15	84
R. Williams	104	22	82
K. S. Roberts	90	9	81
J. F. Weaver	93	8	85
G. W. Hamill	95	22	73
F. Korndorfer	88	5	83
C. S. Coleman	111	27	84
*R. Nichols	98	..	..
*W. H. Pinkham	110	..	..
A. W. Hale	103	12	91
W. T. Gilmour	94	14	80
E. F. Conroy	115	30	85
H. Bollman	117	27	90
J. J. Lannigan	114	27	87
C. Wall	93	12	81
H. Garrity	91	15	76
C. Henzel	118	35	83
E. D. Winslow	115	35	80
F. Allen	105	20	85
T. A. Johnson	83	3	80
*N. Moneypenny	93	..	..
J. Woods	95	21	74
L. S. Rothwell	84	8	76

* Guest.

◆

Delaware Valley Trade Golfers Play Rogers Forge Course

The Delaware Valley Trade Golf Association held its September tournament at the Rogers Forge Golf club on the 25th, with the Baltimore, Md., members of the association, E. M. Crocker, W. A. McPhail, Charles McPhail and H. B. Marshall as hosts. The day was ideal for golf and a good crowd turned out.

Prizes for the morning and afternoon rounds were won by the following: Charles Hackett, E. L. MacWhorter, William Brewton, E. M. Crocker, M. B.

C10930 Empire *closet with integral overflow feature and* Alpha *water-controlled flush valve*

A market exists for this closet

Feature it

Today you can't just handle any materials and expect to find a market for them because they're cheap. You've got to find your market first and then concentrate on the fixtures suited for it.

Right now the most active market is offered by public buildings, schools, hospitals, and institutions. For these Crane Co. has developed a new closet in which the considerations that come first with them—sanitation and low operating costs—are stressed.

This new closet is the *Empire* siphon-jet . . . here are its features:

(1) In addition to the regular trap-way it has an integral overflow which discharges directly into the closet outlet if the regular trap-way becomes clogged.

(2) The downleg of the overflow is much larger in area than the inlet. This enables anything entering the inlet of the overflow to pass the outlet.

(3) Trap-way will pass a 2⅜" diameter ball.

(4) Full siphon-jet—15" high.

(5) A 3" water seal and 10 x 14" water surface are maintained at all times whether the trap-way is clogged or not.

(6) Rim opening 10 x 13".

Full details concerning this closet can be had by writing Crane Co. Better yet, see the *Empire* siphon-jet yourself at your Crane branch or obtain information from a Crane salesman.

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CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO
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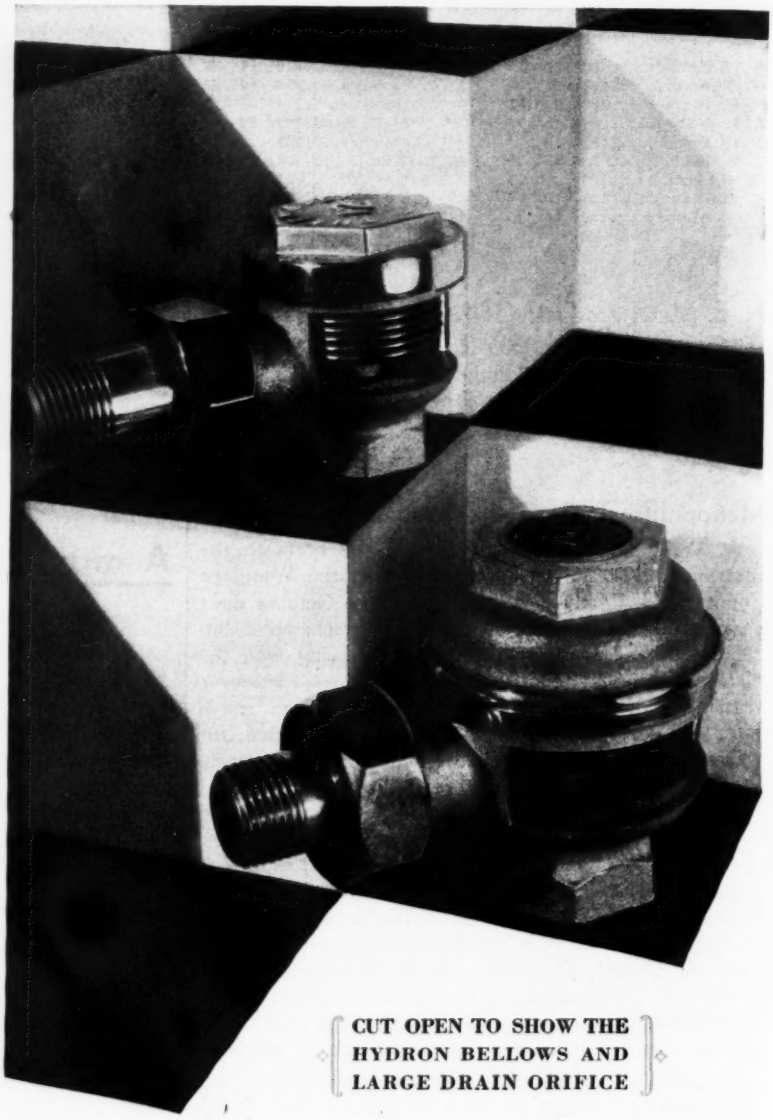
He saw... it happen and he now says:

"If you saw this trap being made you would never use any other. I saw the Hydron Bellows being formed from a tube by internal hydraulic pressure—pressure greater by far than the bellows will ever meet with in use.

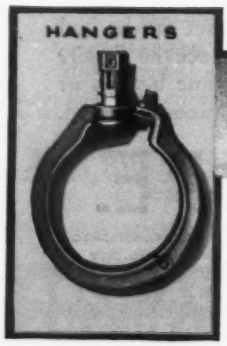
"I saw that if any weakness existed in the tube or the end fitting, the bellows would then and there be destroyed. That is why they can say that each and every Thermoflex trap is 'immortal.' It will open and close millions of times—outlasting the radiator, and even the building itself."

(Statement of a nationally known American Engineer)

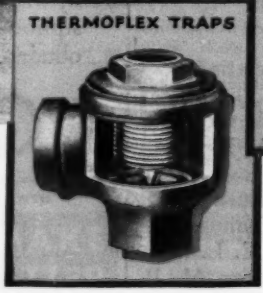


CUT OPEN TO SHOW THE HYDRON BELLOWS AND LARGE DRAIN ORIFICE

THERMOFLEX



Pipe fittings, cast and malleable, perfectly threaded, accurately machined and rigidly inspected. Pipe hangers adjustable after the pipe is up. Reduce installation costs and maintenance expense.



The famous Quartz bulbsprinkler head. In most cases sprinklers will reduce insurance expense from 50 to 90 percent.

Where air dryness adversely affects processes, large savings are made by our humidification equipment.

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This is to Certify that this
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product has been individually inspected and tested by us, and that this tag is affixed by our engineer as denoting approval in accordance with test requirements outlined on the reverse side of this certificate.
Pittsburgh Testing Laboratory
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Certified by P.T.L.

An engineer of the Pittsburgh Testing Laboratory tests each and every individual trap and affixes the certification tag.

The Hydron bellows is in all Thermoflex radiator traps, drip traps, offset traps and high pressure traps. Look in Sweets Engineering Catalogues, page 572. Or write for information to Grinnell Company, Inc., exclusive distributors. Our sales engineers will work with you to insure permanent satisfaction.

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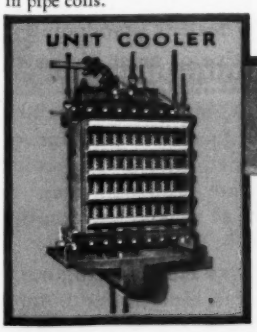
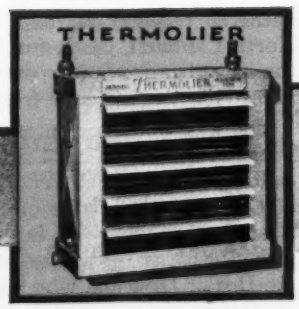
TRAPS

A revolutionary improvement in refrigeration. It replaces more than ten times its weight in pipe coils.



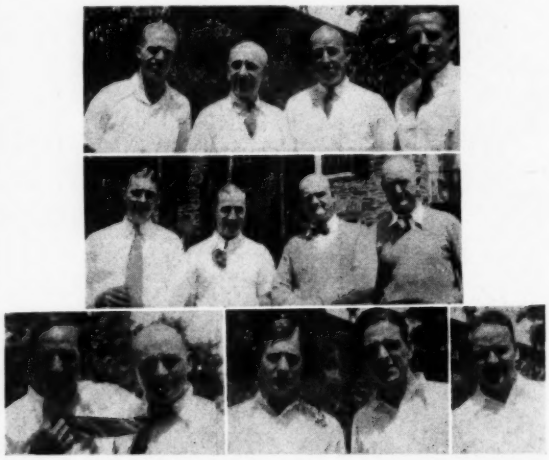


This remarkable Unit Heater is a better and cheaper means of heating industrial and commercial buildings. Heating systems can usually be modernized almost over-night, with a tremendous saving on fuel.

Pipe fabrication, lap joints, pipe bends, forged hangers and welded headers comprise the Triple XXX line for Super Power work. By modernizing to use high temperature steam your yearly savings will often run to five or six figures.

Squires, George Lang, H. B. Marshall, Charles McPhail, Russell Knight and Al. Gemmill.

The October tournament will be held at the Pine Valley club, in New Jersey, on the 20th, and a large attendance is anticipated. Arrangements have been made to take care of those who arrive on Monday



Top row, left to right: George Lang, George Bridgeman, R. Groff and A. Hale. Second row: Charles Snodgrass, Chris. Weber, Charles F. Hackett, president of the association, and Robert Savill. Bottom row: A. V. Gemmill, John Blitzer, Jr., R. Pancoast, C. Knight and Wilson Tyler, captain. Photos taken at recent tournament of the Delaware Valley (Pa.) Golf Association

evening, October 19. A dinner and meeting will be held Monday night and the tournament the next day.

Following are the scores for the 18-hole afternoon round:

	G.	H.	N.		G.	H.	N.
E. L. MacWhorter	94	32	62	W. A. McPhail	90	15	75
Russell D. Knight	112	32	80	J. Ellis McPhail	90	(Guest)	
Wm. G. Brewton	98	30	68	Charles P. Hackett	97	35	62
J. W. Worthington	112	35	77	Wilson G. Tyler	101	21	80
E. M. Crocker	86	14	72	John Doody	116	40	76
Chas. McPhail	97	22	75	Bob. Savill	98	22	76
Mr. Russell	82	(Guest)		M. B. Squires	83	20	63
Al. Gemmill	84	12	72	Herbert Price	108	(Guest)	
				Geo. H. Lang	98	28	70
				H. B. Marshall	96	26	70

◆

New Jersey Oil Burner Dealers Hold Meeting

Oil burner dealers in Northern New Jersey gathered recently at the Greenbrook Country Club, North Caldwell, N. J., for the purpose of discussing the organization of a new association devoted to improving the industry from a dealer's standpoint.

The meeting was representative of most of the oil burner equipment sold in that territory and was called to order by A. W. Clark, managing secretary of the Dealer Division of the American Oil Burner Association, Inc., who introduced Lionel L. Jacobs, vice president of the association, and chairman of the Dealer Division, who spoke at some length on the need for a strong organization in the territory.

L. S. Smyth, of Montclair, was elected temporary chairman and J. A. Powell was elected temporary secretary.

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BURNHAM

Radiator

That Means Business For You

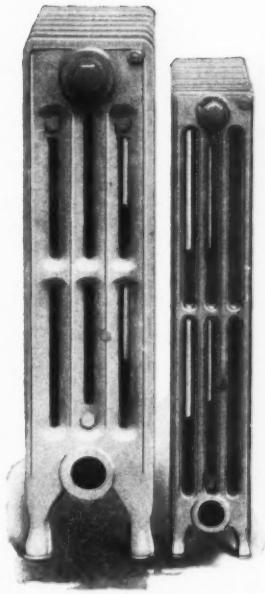
YOU know how we took the old awkward cast iron radiator and made it good-to-look-at. Also, how we stepped up its capacity.

Now we've gone a long ways further. This time REDUCED ITS SIZE without in the least reducing its capacity. Done this, and at the same time made it still better looking.

You can put these new custom radiators right in the room or into the wall, between the studding, for concealed radiation. Get all the trouble-free endurance of cast iron, with all the heating effectiveness of modern big heating surfaces.

Radiators with all the old cast iron virtues.

Send for full descriptions, pictures and prices. They meet all competition.



It is plain to see how much narrower, lower and shorter the new Burnham Radiator is than the old ones of equal heating capacity.

The New Burnham

P. S.—We make and sell "thin" radiators of other types. That's why we are so enthusiastic about cast iron, at cast iron prices.

Burnham Boiler Corporation

IRVINGTON NEW YORK

Representatives in all principal cities of the United States and Canada

Double drain board Monel Metal kitchen sink. Made in nominal sizes of 72" x 21" and 60" x 21".

Ask your customers "is YOUR sink as good looking as your KITCHEN?"

● Chances are, many of your customers have kitchens that are modern, attractive, well equipped in every respect, save one — the sink. And if you talked with these folks you'd probably find that, they too, are aware of this deficiency and would like to bring their kitchens up to date.

Show them how it can be done... how the new Monel Metal Sinks will bring their kitchens "back to life." Let your customers see for themselves the modern, harmonizing beauty of these sinks that set new standards of sink design and construction. Tell them that you sell the silvery sinks that they have seen advertised in the leading national magazines during the past few months. Invite them to come in and inspect these sinks at your store at the first opportunity.

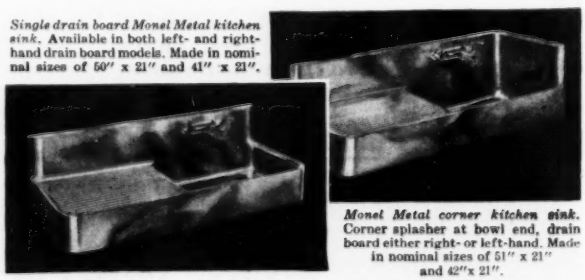
When you realize that just about every home in your town over ten years old needs a new sink, you'll agree that this sink replacement business is well worth going after, especially when you consider the profit you make on every Monel Metal Sink.

We'll be glad to help you get your slice of this business, and if you'll drop us a line we'll tell you how.

Monel Metal Sinks Offer These Eight Points of Superiority

1. Rich, lustrous beauty . . . with a satiny, glass-smooth surface that is easy to clean and keep clean.
2. Neutral, silver tone that blends with any kitchen color scheme.
3. Rust-proof . . . highly resistant to corrosion . . . strong as steel.
4. Solid metal clear through, with no coating to chip, crack or wear off. *Less danger of damage during installation.*
5. 10 standardized models and 6 sizes. One-piece construction of heavy gauge Monel Metal. No joints or seams. Reinforced and sound-deadened.
6. 31% more working space than an ordinary sink of same nominal size.
7. Less weight. *Saves labor and expense . . . installing, stocking and handling.*
8. Standardized construction and quantity production methods bring prices within reach of the average purse.

Single drain board Monel Metal kitchen sink. Available in both left- and right-hand drain board models. Made in nominal sizes of 50" x 21" and 41" x 21".



Monel Metal corner kitchen sink. Corner splasher at bowl end, drain board either right- or left-hand. Made in nominal sizes of 51" x 21" and 42"x 21".

A HIGH NICKEL ALLOY

MONEL METAL

NICKEL ALLOYS LOOK BETTER LONGER

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET, NEW YORK, N. Y.

INCO MONEL METAL

Monel Metal is a registered trade mark applied to a technically controlled nickel-copper alloy of high nickel content. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

MARKETS

BUSINESS REPORTS FROM LARGE JOBBING CENTERS

REPORTS received from manufacturers and wholesalers indicate that the best activity was had during the past two weeks in the heating materials line, such as boilers, radiators and accessories. In the plumbing field, contractor demand was light, particularly in the case of roughing-in goods. Finishing goods such as enameled ware and pottery, however, moved more freely than roughing goods, according to the majority of wholesalers interviewed.

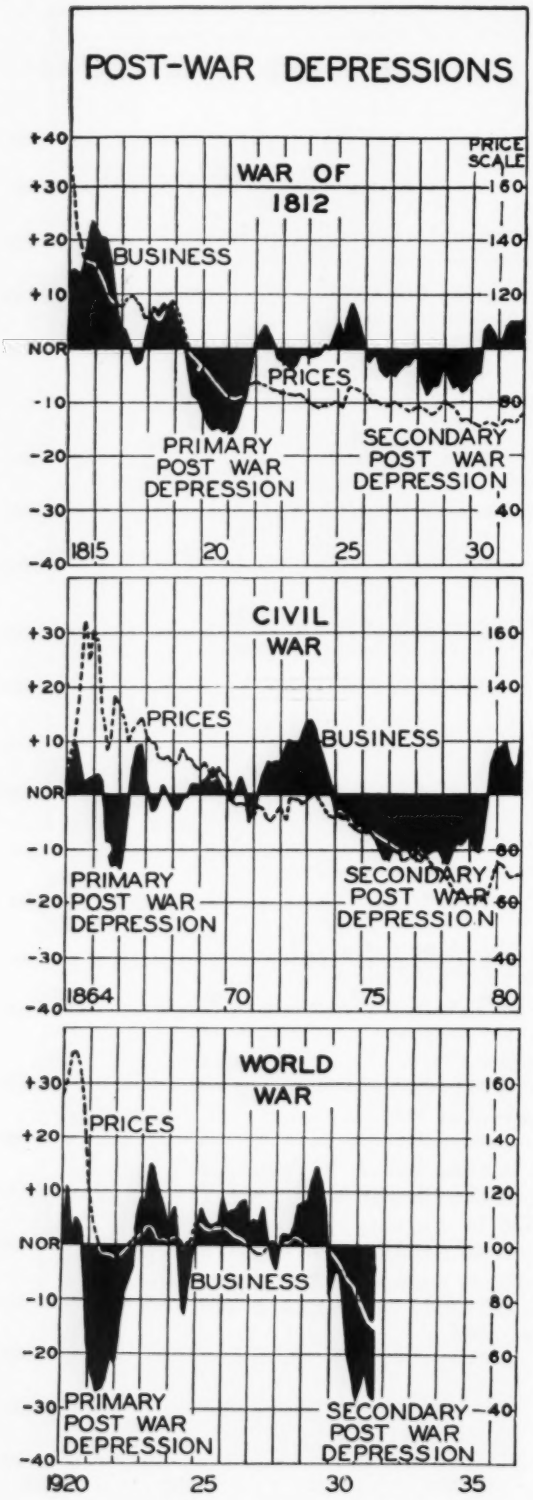
Manufacturers' salesmen say that wholesalers show little willingness to place orders for other than their immediate requirements. Jobbers' stocks, however, are in most cases pared to minimum working levels, which nessesitates the frequent placing of small-sized orders for quick shipment. Manufacturers, almost without exception, are prepared to meet these requests promptly. No word has been received since our last review appeared of changes in manufacturers' published prices to wholesalers affecting the major plumbing and heating commodities.

August shipments of enameled sanitary ware, based on reports submitted to the Bureau of the Census by 21 manufacturers who comprise practically the entire industry, were 151,497 pieces, as compared with 183,552 in July and 203,227 pieces in August, 1930. Total shipments for the first eight months of 1931 were 1,373,803 pieces, as compared with 1,727,499 pieces during the corresponding period of 1930.

August shipments of vitreous china plumbing fixtures, including all vitreous chinaware which in regular practice is connected with a drainage system, as reported to the Bureau of the Census by 25 manufacturers, were 153,348 pieces, as compared with 146,843 pieces in July and 200,896 pieces in August, 1930. Total shipments for the first eight months of 1931 were 1,325,253, as compared with 1,719,749 pieces in the corresponding period of 1930.

August shipments of round cast iron heating boilers in thousands of pounds, as reported by the Bureau of the Census, were 7,309, as compared with 6,071 in July and 8,736 in August, 1930. August shipments of square boilers, in thousands of pounds, were 19,413, as compared with 15,184 in July and 24,178 in August, 1930. August shipments of gas-fired boilers totaled $213,852, as compared with $159,568 in July and $430,365 in August, 1930.

Great Wars Always Costly to Business*



THIS depression, and that of 1921, will probably be discussed in future economic histories as holding important places among the major consequences of the World War. Students of our own business history will note that we had a primary and a secondary post-war depression following the War of 1812, again a primary and a secondary post-war depression following the Civil War, and now once more a primary and a secondary post-war depression following the World War. Moreover, these pairs of post-war depressions have had certain definite characteristics in common that appear to indicate that they have formed parts of a specialized pattern that business activity follows after all great wars.

It is not the event of war that shapes the patterns, but rather the fact that great wars cause sudden and extreme advances in commodity prices. It is this sudden price advance which largely determines the nature and sequence of the business cycles of the following 20 years or so. Since sudden advances in the general levels of commodity prices seldom come except in time of war, the special pattern of business we are considering may be thought of as restricted to post-war periods.

In broad general terms we may think of all the people in the world as being divided into two great classes. In the first class are the people who live in the country, and earn their livelihoods by extracting valuable things from the earth through agriculture, mining, lumbering, and fishing. In the second class are those who live in towns and cities, and support themselves by taking the things produced by the country dwellers and fabricating them, and trading in them.

When war comes, and commodity prices mount, the prompt result is a great wave of prosperity for the farmers. For some time their production costs increase but little, and the increases in the prices received for crops are almost all profit. Under such conditions of very rapid price advances, the doubling of the amount received for a crop of given size may well result in a ten-fold increase in farmer profits. The next development is a great speculation in farm lands, the plowing up of additional fields, the use of profits to buy more land, and a large increase in farm mortgages. Production is sharply stepped up.

This period proves rather difficult for the city dwellers, for while industry and trade are brisk, and everyone can find work, the cost of living is high, wages do not advance nearly so rapidly as prices, and industrial disputes are frequent as pay advances are demanded. However, toward the end of the war, or shortly thereafter, commodity prices reach their peak and turn down. With the price deflation comes business depression for rural and urban dwellers alike. After the Civil War this

* From the Business Bulletin of the Cleveland Trust Co.

The Metal Market

	Oct. 12	Avg. Sept., 1931	Avg. July, 1931	Avg. 1929
PIG IRON—				
No. 2 foundry, Chicago	$17.00	$17.50	$17.50	$20.00
PLATES AND SHEETS—				
Steel boiler plates, Pittsburgh, per lb.	1.60c	1.60c	1.60c	1.93c
Blue annealed sheets, No. 10, Pittsburgh, per lb.	1.85c	1.85c	1.85c	2.17c
*Hot rolled annealed sheets, No. 24, Pittsburgh, per lb.	2.40c	2.40c	2.40c	2.85c
Galvanized sheets, No. 24, Pittsburgh, per lb.	2.90c	2.90c	2.90c	3.57c
TIN—				
Straits tin (spot) New York	22.87½c			
LEAD—				
E. St. Louis	3.82½c			

The Old Metal Market
Dealers' Buying Prices

	Per lb.		Per lb.
Aluminum clippings	11½c	Copper, light	3¾c
Block tin pipe	15½c	Heavy copper and wire	4½c
Brass, light	2¼c	Zinc, old	1½c
Brass, heavy yellow	2¾c	Lead, heavy	2¾c
No. 1 comp. red brass	3¾c	Solder joints (close cut)	4 c
Heavy crucible copper	4¾c		

NOTE: Prices are those quoted on Monday of this week.
*Comparisons are with old classification No. 24 black sheets.

came in 1865, as soon as hostilities ceased, but after the World War the primary post-war depression did not come until 1921. With the depression comes a collapse of the farm land boom, and the farmers find themselves burdened with the heavy mortgages placed at the earlier high land prices.

When this primary post-war price deflation and primary post-war depression have run their course, there ensues a period of urban prosperity. Food is now relatively cheap in the cities, for production has increased more rapidly than demand. Food constitutes a large part of the cost of living of the industrial workers, and when food prices decline more rapidly than wages the result is a period of hard times for the farmers, but of prosperity for city people. The world was moving through such a period from the depression of 1921 to the end of the prosperity in 1929. Two characteristic developments mark a period of that sort. The first is a boom in city real estate, with great activity in building construction, stimulated not merely by the prevailing economic prosperity of the city dwellers, but also by the making up of the building shortages that accumulated during the previous war period of inflated prices. The other development is general speculation in almost everything except commodities.

A period of this sort can last a long time, but eventually it destroys itself. The real estate boom and the construction boom run to excesses. General speculation creates fictitious values. There comes a time when the country districts, with their diminished purchasing power, can no longer consume their normal proportion of the goods produced by the cities. Then comes a secondary decline in commodity prices, a collapse of city real estate values, and the secondary post-war depression, afflicting urban communities and country districts alike. During this secondary depression wages, prices and profits for both city dwellers and country people are painfully jarred and jolted back into a working adjust-

HOLD LAST RITES FOR OLD TOILETS

Let low cost T/N take over the job

HUNDREDS of old water-closets are making their "farewell" appearance—for home-owners have discovered low-cost T/N. With new building slack, alert plumbers are finding "live jobs" in replacement work with the T/N.

Made of finest vitreous china—twice-fired for long-wearing—T/N's moderate price is a pleasant surprise to home-owners. Its modern, one-piece, streamline design fits anywhere—in the most unlikely corner, under windows, in that extra toilet-room under the stairs. There's no ugly wall-tank to mar walls. 12" minimum roughing is all you need. Make just two simple connections and T/N is installed!

T/N may be ordered in white or in a wide choice of colors.

Its thorough flushing action is unusually quiet. It is absolutely non-overflowing from stoppage within the fixture. Pick off some of these sweet replacement work profits for yourself. Write us for full details about T/N—and your jobber's name.

ONE PIECE WATER CLOSET SILENT NON-OVERFLOW
Patented, Pat. Pend

W. A. CASE & SON MANUFACTURING COMPANY
Founded 1853
Dept. 6110 220 Delaware Avenue Buffalo, N. Y.

T/N
ONE PIECE WATER CLOSET

ment that enables the nation, or the nations, to make progress in the long task of paying off the accumulated indebtedness. The significance of these sequences has been commented upon by Professors Warren and Pearson of Cornell University.

Apparently it takes about 10 years for the developments that have been described to take place. The peak of commodity prices of the War of 1812 came in 1815, and the secondary depression was ushered in 10 years later by the panic of 1825. In the Civil War the peak of prices came in 1864, and the first full year of the secondary post-war depression was 1874. After the World War the peak of commodity prices was in 1920, and the first full year of the secondary depression was 1930. In each case there seems to have been the same sequence of (1) price inflation, (2) farm prosperity and farm land speculation, (3) price deflation and depression, (4) city prosperity and speculation, (5) secondary price deflation and secondary depression.

The same sequence has been followed before in earlier war and post-war periods, but this time the whole world is involved. Instead of thinking about it is terms of country districts and city populations, we must remember that this time it affects whole nations, and almost all nations, all over the world. Our troubles are not the result of some mysterious and hitherto unsuspected weakness in our social system, nor can they be cured by adopting a five-year, or ten-year, or twenty-year plan of reorganization of our industries, our banks and our commerce. The true lesson of this depression is that we cannot afford any more great wars.

Committee of Ten Holds First Fall Meeting

Eleven of the thirteen organizations and industries now affiliated with the Committee of Ten were represented at the first of the fall meetings of the Committee, held at the Union League club in Chicago, on September 15.

Detailed reports were presented by the managing director and the committees on constitution and by-laws and local meetings. Preliminary reports were submitted by the committees on manuals, joint service, and standards of products and practices.

Two organizations concerned with fuel utilization as consumers and two technical organizations were unanimously invited to affiliate with the Committee of Ten as advisory members, and one association representing manufacturing and marketing branches was invited to become an active member. The technical organizations are the American Institute of Architects and the American Society of Mechanical Engineers; the two operating or consumer organizations are the National Association of Power Engineers and the National Association of Building Owners and Managers. The Steel Heating Boiler Institute was invited to become an active member.

Following is a complete list of the various standing committees as appointed:

Ways and Means—Chairman, H. A. Glover of National Coal Association; E. B. Langenberg, National Warm Air Heating Association; George Harms, National Sheet Metal Contractors' Association.

Membership—Chairman, Carlyle M. Terry of Anthracite Institute; R. C. Goddard, Stoker Manufactur-

Revelation *goes anywhere!*

The compactness of the Revelation Closet not only makes it ideal for all bath room installations but for extra, smaller rooms as well. It's *the* closet for remodeling work and for additional closets in basement, main floor and upper floor of the house.

It is highly glazed so it may be placed anywhere in the room with back exposed. Quiet operation, integral—tank bolted directly on bowl (bolts not exposed to water). Not necessary to fasten to wall.

Tank can be entirely drained of water by holding flushing device down a moment. Get in touch with your closest Peerless office at once. Ask them about numerous other Revelation features.

Or ask your jobber.

PEERLESS SELLING COMPANY
Evansville :: Indiana

Peerless-Alabama Co., Inc., 3000 Avenue E, Birmingham, Ala.
Peerless-Atlantic Company, 470 Stuart St., Boston, Mass.
Peerless-Colorado Company, 785 S. Broadway, Denver, Colorado
Peerless-Missouri Company, 5021 Fyler Avenue, St. Louis, Mo.
Peerless-Northern Company, Charles and Vandalia Sts., St. Paul, Minn.
Peerless-Oklahoma Company, 1-11 W. 8th St., Oklahoma City, Oklahoma
Peerless-Penna. Company, 634 W. Girard Avenue, Philadelphia, Penna.
Peerless-Tulsa Company, 1645 E. 6th St., Tulsa, Oklahoma
Peerless-Utah Company, 150 West 1st South St., Salt Lake City, Utah
Alamo Plumbing Supply Co., 637 E. Crockett St., San Antonio, Tex.
Plumbing Fixture Co., 12414 Euclid Ave., East Cleveland, Ohio

ers' Association; Harry L. Gandy, National Coal Association.

Research—Chairman, J. H. Walker, American Society of Heating & Ventilating Engineers; F. G. Frey, Anthracite Service; H. J. Rose, of Koppers Research Corp.; R. V. Frost, American Society of Heating & Ventilating Engineers.

Joint Service—Chairman, H. M. Hart, Heating & Piping Contractors National Association; R. A. Miller, National Retail Coal Merchants' Association; Harvey Manney, National Warm Air Heating Association; Jack Stowell, National Sheet Metal Contractors' Association; C. W. Plass, Stoker Manufacturers' Association.

Manual—Chairman, Homer R. Linn, Institute of Boiler & Radiator Manufacturers; Carlyle M. Terry and R. A. Miller.

Local Meetings—Chairman, E. B. Langenberg, R. A. Miller and L. W. Smith, Jr., Committee of Ten.

Publicity and Speakers—Chairman, Lorin W. Smith, Jr.; Carlyle M. Terry and H. H. Kurtz, Stoker Manufacturers' Association and Midwest Stoker Association.

Standards of Products and Practices—divided into three sub-committees:

Coal—Chairman, L. H. Dayhoff, American Wholesale Coal Association; Carlyle M. Terry and M. E. Robinson, Jr., National Retail Coal Merchants' Association.

Heating—Chairman, Homer R. Linn, J. H. Walker, Harvey Manney.

Stokers and Accessories—Chairman, H. H. Kurtz; Ben L. Boalt, Heating Accessories Manufacturers; Thomas A. Marsh, Midwest Stoker Association.

Convention Dates

October 22 and 23, 1931—The seventh annual meeting of the Missouri Water and Sewerage Conference, to be held at Jefferson City, Mo.

October 28 and 29, 1931—C. S. A.—The 37th annual meeting of the Central Supply Association, to be held at the Palmer House, Chicago.

November 11, 12 and 13, 1931—I. A. A.—The 32nd annual convention of the International Acetylene Association, to be held at the Congress Hotel, Chicago, Ill.

February 2, 3 and 4, 1932—OHIO—The annual convention of the Ohio Master Plumbers Association, to be held at Cincinnati, with headquarters at the Netherland Plaza Hotel.

March 14, 15 and 16, 1932—INDIANA—The annual convention of the Indiana Association of Master Plumbers, to be held at Muncie.

April 27-29, 1932—N. P. S. A.—The annual convention of the National Pipe and Supplies Association, to be held at the Greenbrier Hotel and Cottages, White Sulphur Springs, W. Va.

COMING TRADE EVENTS

October 20, 1931—The fifth tournament of the Plumbing and Heating Golf Association of New York, to be held at Kings Ridge Club, Portchester, N. Y.

October 22, 1931—The monthly tournament of the New England Metal Products Golf Association, to be held at the Albermarle Golf Club, West Newton, Mass.

November 7, 1931—The seventh annual dinner-dance of the Jobbers' Credit Association of New York City, to be held at the Commodore hotel.

November 16-21, 1931—The Third International Conference on Bituminous Coal, to be held at Carnegie Institute of Technology, Pittsburgh, Pa.

December 10 and 11, 1931—The seventh annual Conference on Welding, to be held at Purdue University, Lafayette, Ind.

January 25-29, 1932—The Second International Heating and Ventilating Exposition, to be held in Cleveland, Ohio.

FRETZ-MOON
PIPE
BLACK AND GALVANIZED

THE PIPE *that* MAKES
your DOLLAR BIGGER

FRETZ-MOON
PIPE
BLACK AND GALVANIZED

WHEN the pipe is stamped —"FRETZ-MOON"—you may be sure that you are getting full dollar value in steel pipe—pipe that is made by an entirely different "continuous" process—pipe that is absolutely uniform in structure, in length, and as clean inside as outside.

—you are assured of shortened installation time . . . Fretz-Moon Pipe is easy to bend, easy to cut and thread, and easy to fit. By shortening time you save money, yet produce a high-class job.

Use Fretz-Moon Pipe in your next job—look for the name of Fretz-Moon rolled on the outside of the pipe—and you will quickly understand why many users of pipe will use no other.

FRETZ-MOON TUBE CO., INC. Butler, Pa.

FRETZ-MOON
PIPE
BLACK AND GALVANIZED

Thousands of Householders Want to be Shown how to Reduce Fuel Consumption

HERE'S HOW TO SHOW THEM AND GET PROFITABLE WORK SERVICING HEATING SYSTEMS

Every owner of a heating plant is keenly interested in getting more heat for less money. Show him, Mr. Heating Contractor, that a complete servicing of his heating system will give him just that.

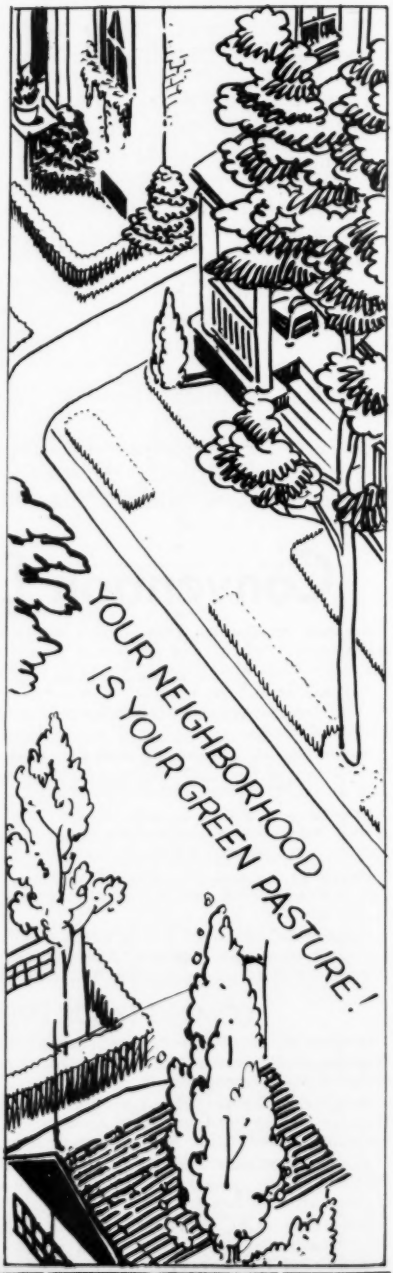
Offer a free inspection of the heating system, then recommend flushing, repairing leaks, and furnishing new equipment.

1/8 INCH OF SCALE REQUIRES 25% MORE FUEL. That's the flushing story in a nutshell. "X" Flushing pays for itself in fuel saved. At $10. and up per job, flushing will pay you nice profits.

When there are leaks to be stopped, depend on "X" Liquid, the original liquid leak repair. Used by Heating Contractors and Engineers everywhere, on repair jobs and new installations.

SPECIAL OFFER—Until Oct. 31st ONLY. Buy a carton (6 cans) of "X" Liquid or "X" Flush from your wholesaler. Pay for 5 cans and get 1 can FREE. SEND IN YOUR ORDER TODAY.

"X" LABORATORIES
25 W. 45th St., New York, N.Y.



THE TRADE

News of Plumbing and Heating Contractors

Cleveland H. & P. C. Prove Merchandising Ability

In a merchandising campaign completed recently by the Heating and Piping Contractors National Association, the Cleveland association (B. Y. Kinzey, manager) was credited with having obtained the largest amount of business among the various locals as a result of the campaign. The Boston association (W. H. Oleson, manager) was second, while the Pittsburgh association (A. P. Roderus, manager) was third.

The general purpose of the campaign was to stimulate interest in merchandising, and prospect canvassing and modernization were particularly stressed. The National office estimates that approximately $50,000 worth of business for heating and piping contractors resulted from the campaign. Another plan, featuring the merchandising of boilers and radiators, will be released soon.

◆

Philadelphia Association to Honor City's Mayor

The Master Plumbers' Association of Philadelphia, Pa., will give a testimonial dinner on Thursday evening, October 22, in honor of J. Hampton Moore, nominee for the office of mayor of Philadelphia. The dinner will be held at the Hotel Sylvania, and representatives of the manufacturing and wholesaling branches of the industry have been invited to attend.

In a letter to the members of the Philadelphia Association asking them to attend the dinner, Maney J. Feeney, president, says in part:

"As guardians of the health of the city and one of the most important factors in his administration through our affiliation with the bureau of health, we feel that we would be the proper organization to have the honor of entertaining as our guest the next mayor of Philadelphia, an honor that to our knowledge has never before been given to any building trade organization."

◆

N. A. M. P. Convention and Exhibit Committee Is Appointed

That plans are already underway for the 50th annual convention of the National Association of Master Plumbers, which is to be held in New York City in June, 1932, is indicated by the recent appointment of the Convention and Exhibit Committee by National President P. W. Donoghue.

Matthew J. Kennedy, master plumber of Brooklyn, N. Y., has been named chairman of the committee. Other representatives of the Greater New York Master Plumbers' Association on the committee are: William J. Flynn of Bronx, William E. Foley of Richmond Hill, Louis Frisse of Brooklyn, and Morris Jarcho, Fergus McLoughlin and Jere L. Murphy, all of New York City.

George H. Drake of Buffalo, N. Y., past National

The neatly arranged display window pictured above indicates to the passerby that the place of business is an established one. The place of business is that of Edw. J. Stumpf, master plumber, 1805 Lafayette St. Louis, Mo.

president, and F. C. Kuetemeyer of Milwaukee, Wis., chairman of the committee for the 49th annual convention which was held in Milwaukee, have been placed on the committee as representatives of the National association.

Matthew J. Kennedy

The following will represent the manufacturing and wholesaling branches of the industry: C. W. Wanger of Woodward-Wanger Co., Philadelphia, Pa.; W. K. Glen of Crane Co., Chicago; Charles B. Nash of American Radiator and Standard Sanitary Corp., New York City; E. L. Penfrase of Josam Mfg. Co., Cleveland, Ohio; Walter J. Kohler, Jr., of Kohler Co., Kohler, Wis.; and Joseph J. Crotty of Central Foundry Co., New York City.

◆

Plumbing Short-Course to Be Held in Madison, Wis.

Both the Wisconsin Master Plumbers' Association and the Milwaukee Master Plumbers' Association are urging their members to take advantage of the Short-Course in Plumbing to be given at the University of Wisconsin at Madison, Wis., late in January, 1932, or early in February. The course will be open to master plumbers, superintendents, and plumbing instructors, and will be held over a five-day period.

◆

Dates Set for Welding Conference at Purdue University

The Engineering Extension Department of Purdue University announces its seventh annual Conference on Welding to be held at Lafayette, Ind., December 10 and 11, 1931. The meeting will consist of lectures, demonstrations, and exhibits. Two hundred and seventy-five representatives from the industries of Indiana and neighboring states were in attendance at the conference last year. Prof. W. A. Knapp is in charge of the Engineering Extension Department.

◆

Galesburg, Ill., Masters Hold Successful Outing

One of the most successful affairs in the history of the Master Plumbers' Association of Galesburg, Ill., was held recently with the annual outing of the association at Lincoln park. More than 300 people were present to enjoy the picnic and sports program, including many out-of-town guests.

The committee responsible for the success of the outing consisted of Leo Sauter, Phillip Quigley, Adolph Albrecht, Charles Essex and Frank Cummings.

The morning was spent in a baseball game between the master plumbers and the journeymen. The latter were victorious by a score of 13 to 7. Luncheon followed, and then the sports events. The glory that the journeymen won by defeating the masters was short-lived, as they fell before the strong May Company's team in the afternoon, by a score of 18 to 3.

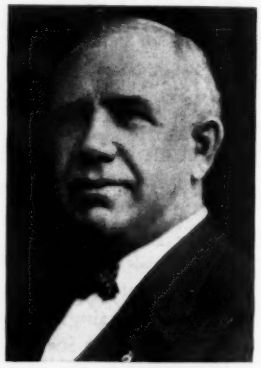
Oscar Hvarven of Galesburg acted as master of ceremonies and introduced the prominent guests present. Dan O'Connor of Peoria, one of the pioneer masters in the state and one of the organizers of the state association, addressed the gathering. Others who spoke were: Fred R. Bailey of Rockford, president of the state association; C. A. Bolton of Chicago Heights, state secretary; Melvin L. McKay of Rock Island, past state president. Kirk A. Journy of Rock Island, secretary of the Tri-City Plumbing and Heating Trade Development League; H. E. Repine of Rock Island, representative of the journeymen plumbers; G. H. Englin, secretary, and Glenn Anderson, president, both officers of the Galesburg association.

The annual dance was held in the evening at the Lake Storey pavilion, with a record crowd in attendance.

◆

Is Named General Chairman for Ohio Convention

John Doherty, president of the Cincinnati Master Plumbers' Association has appointed Edward Frank as general chairman for the annual convention of the Ohio Master Plumbers Association, which will be held in Cincinnati, February 2, 3 and 4, 1932.



Edward Frank

Mr. Frank has already made a partial report on plans for the convention to the state board of directors and to the board of directors of the Cincinnati association. This was published in a recent issue.

The convention headquarters will be in the new Netherland Plaza Hotel, which is a part of a $33,000,000 project known as the Carew Tower. The building is modern in every respect and is a "little world" in itself.

◆

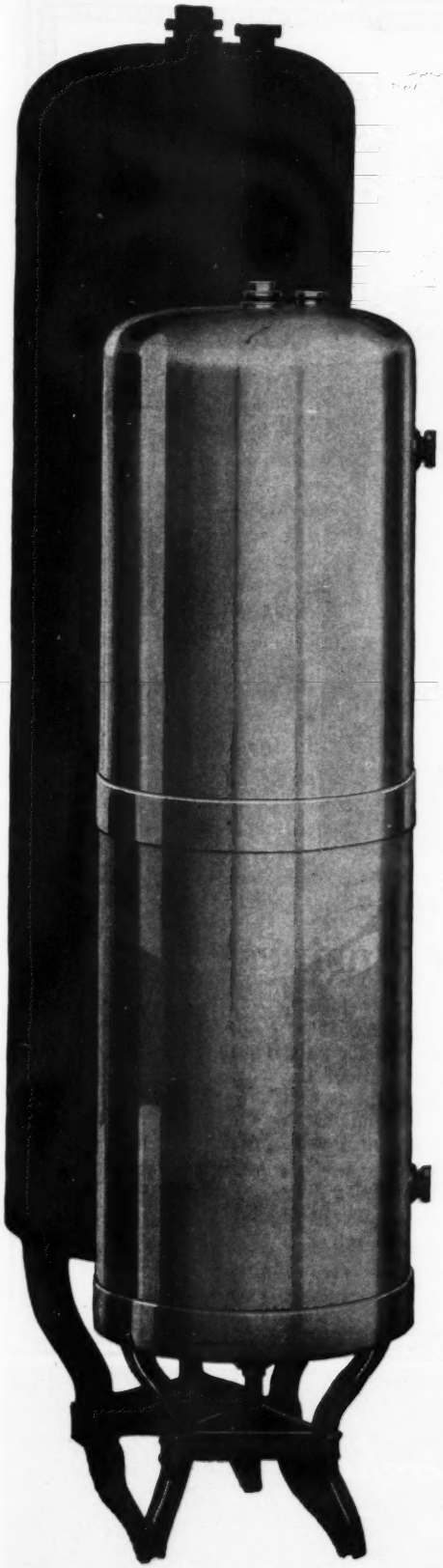
Stag Outing in Buffalo Is Big Success

The Plumbing-Heating and Supply Trades of Buffalo, N. Y., held their annual stag outing on September 29 at the Lake Shore Trap and Field Club. The party was held under the auspices of the Master Plumbers' Association of Buffalo.

The affair began with a luncheon after which a number of athletic events took place and in the evening a sumptuous banquet was served which was enlivened by music.

The committee in charge of the outing consisted of Albert G. Kranichfeld, chairman, Fred N. Jones, C. H. Brenner, William Ludlow, Henry J. Ritter and George L. Schank.

The first of the athletic events was a ball game between the East Side and the West Side which was won by the former by a score of 9 to 7. William



Profit for you

in

BROWN & BROTHERS COPPER RANGE BOILERS

SINCE 1876, Brown & Brothers Seamless Drawn Copper Range Boilers have been manufactured to standards that have never been excelled . . . Many boilers over 40 years old are still giving satisfactory service. There's profit for you in the sale of this quality product.

¶ In construction Brown & Brothers Boilers are unique. They are made of two seamless shells of Anaconda Copper telescoped together. This joint, the only seam in the boiler, is reinforced and concealed by a heavy band of copper. It is this construction that accounts for their recognized durability.

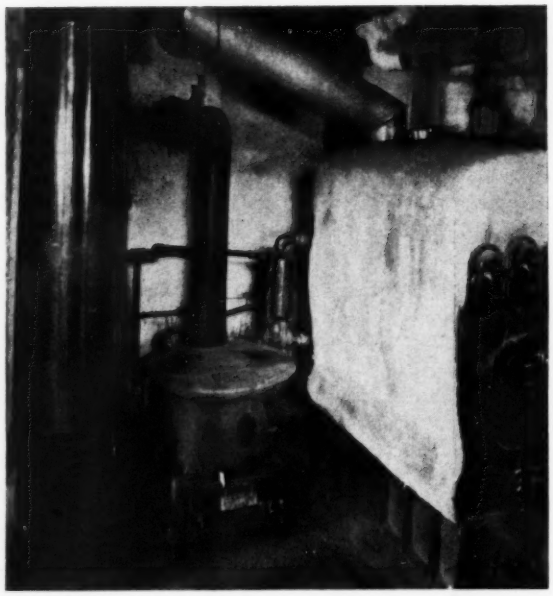
¶ Formerly made in two weights, they are now available in *extra heavy gauge* copper only, and at new low prices. Your distributor can supply you with sizes from 30 to 200 gallons on short notice. The American Brass Company, General Offices: Waterbury, Connecticut.

ANACONDA
from mine to consumer
REG. U.S. PAT. OFF.

MADE OF TWO SHELLS OF ANACONDA COPPER

Burnham
HOT WATER SUPPLY
Boilers

This efficient hot water supply system is in a home in Chester, N. Y. The tank was brought down from the kitchen, because the housewife found it made the kitchen hot in summer.



The Burnham Laundry Stove keeps the tank hot all summer. An Indirect Hot Water Heater takes up the work in winter. All undertaken to keep the kitchen cool.

Those Hot Kitchens They're Good for Your Business

In how many kitchens in your neighborhood is there a heat-radiating hot water tank snugged up by the range?

Ever think of the money makers they might be for you? Here's how. Put them down cellar. The woman of the house will be all on your side. While about it, might as well sell them an independent hot water heater. Or make it a combination job, making the house heating boiler do it winters, and a Burnham water supply boiler carry on summers.

There are Burnham tank heaters and Burnham equipment, to supply every hot water requirement.

Have the catalog and prices to take advantage of this summer business properly.

Burnham Boiler Corporation

IRVINGTON NEW YORK

Representatives in all principal cities of the United States and Canada

MacGamwell was captain of the West Side and Christ J. Rasp led the East Side team. Included on the program were six other major sports events. The winners were all given prizes.

Among the master plumbers, heating contractors and members of the supply trade who received prizes were the following: Walter Chapin, C. J. Rasp, Fred N. Jones, M. Zimmerman, H. C. Springfield, J. C. Stiner, John Telaak, Ray Van Dick, William Schaefer, W. Hillborne, L. M. Howe, L. M. Porter, Fred Yuhl, Henry J. Ritter, George D. Lucas, J. Navagh, Conrad Stengel, George Sanders, Charles Waldo, J. W. Chilson, F. Howe, C. Rhodes, Joseph Heber, Walter Maurer, D. C. Williams, H. D. Carey, Steffan Tholman, D. D. Ewing and J. C. Connelly.

◆

Death of William Young

William Young, an honorary member of the Manhattan Master Plumbers' Association, died October 1. Mr. Young had not only the distinction of being the oldest member of the association but also was a charter member. He was present at the first meeting of the association, held on April 15, 1881. He had been in failing health for some time and recently had been confined to the home of his nephew, T. Young of 30 W. 126th street, New York City. Burial was in Easton, Pa., Mr. Young's boyhood home.

◆

Tri-City Development League Holds Stag Party

The Tri-City Plumbing and Heating Trade Development League of Rock Island, Ill., held its annual stag party and fish fry on the Rock River, near Moline, Ill., on September 26. Fifty members of the league were in attendance, and baseball, horseshoe pitching and other sports were enjoyed during the day. A fish dinner was served in the evening.

The committee in charge of the affair consisted of L. R. Sidney, chairman, H. F. Lamp, vice chairman, R. F. Brasher, Leonard Johnson, Oscar Newberg, George Steckel, R. E. Feeney, John A. Day, H. C. Fries, W. H. Collins and Arthur Dallenback.

◆

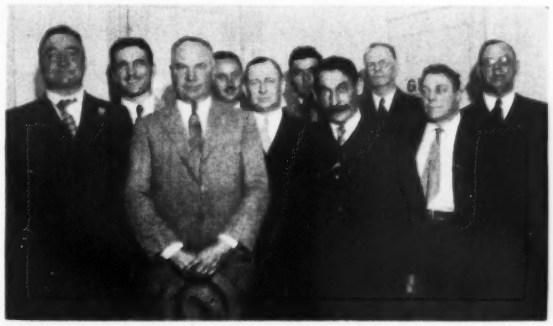
Sonoma Association Meets at Occidental

One of the most enthusiastic meetings of the Sonoma County (Calif.) Merchant Plumbers' Association took place at Occidental, September 16, when the dinner gathering was addressed by R. W. Timmons of Richmond, executive board member, and John M. LaDieu of Los Angeles, secretary of the state association.

Mr. Timmons opened his remarks by referring to the valuable contacts made possible only through organized effort. He then stressed the advantages of the fixture tax plan as a means of supporting organization activities. "You may then budget your funds and know just where you stand," he added. Mr. Timmons also spoke in support of the mutual benefit fund of the state association, closing his remarks with a brief summary of the recent executive board meeting.

Secretary LaDieu pointed out the necessity of a carefully organized business, which holds true today more than ever. Turning to association work, he said in part: "You should strive toward one well defined objective at a time, and see it through." Co-operation with state officials in the matter of the contractors' license law came in for its share of mention, when the secretary said: "If you will report infractions of this law to the state license bureau, you will go a long way toward driving the unestablished contractor out of Sonoma County." He made it clear, however, that while proceedings may be discussed informally at association meetings, action must be taken by individuals. Mr. LaDieu concluded with a short argument in favor of the fixture tax, "as being conducive to the best interests of the association."

President Marino Crivella reported a growing sentiment in favor of the proposed county plumbing ordinance, as the result of intensive work on the part of his association. The president urged that every possible bit of evidence in support of the ordinance be presented.



Group at meeting of Sonoma County M. P. A. at Occidental, Calif. Second from left, President Marino Crivella; fourth from left, State Secretary J. M. LaDieu; fifth from left, R. W. Timmons, member state executive board; third from right, Otto C. Hughes, secretary-treasurer

The Sonoma County association is composed of members from Petaluma, Santa Rosa, Sebastopol, Napa and Sonoma. Meetings are held at different points throughout the county on the third Wednesday in each month. The officers are: Marino Crivella of Petaluma, president; Ed. Peterson of Sonoma, vice president; Otto C. Hughes of Santa Rosa, secretary-treasurer.

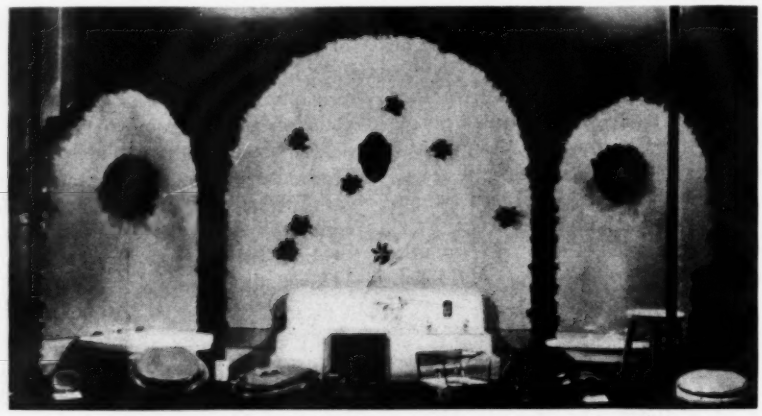
◆

Death of Albert C. Kranichfeld

Albert C. Kranichfeld, a former president of the Master Plumbers Association of Buffalo, N. Y., and a prominent citizen of that city, died recently at his home, 179 Hamlin road. Mr. Kranichfeld, who was in his 73rd year, had been in the plumbing business for many years. Lately his son, Albert G. Kranichfeld, has managed the business.

Mr. Kranichfeld's wife died before him. He is survived by his son, Albert G., and his daughters, Mrs. Harold L. Benway and Mrs. Edward H. Ziemer and two brothers.

Mr. Kranichfeld, in addition to being a past president of the Master Plumbers Association of Buffalo, was past president of St. Peter's United Evangelical church; a member of the board of directors of Deaconess hospital; member of Omega lodge, No. 259, I. O. O. F., Parish lodge No. 292, F. & A. M.; Zuleika Grotto No. 10, MO. V. P. E. R.; Buffalo chapter, No. 71, R. A. M., Lake Erie Commandery, No. 20 K. T.; Ismailia Temple, A. A. O. N. M. S.



Color in Lighting —A Strong Aid to Displays

By DEAN M. WARREN
Engineering Department of
General Electric Co.

This is the second of the articles on window lighting, secured from experts in the "light laboratory" at Nela Park

MUCH interest is evidenced today in the possibilities of decorating with light, and the theater, especially, is using light in its fullest sense as a medium that is flexible, beautiful and sensation producing. A modern stage would be lost without artificial light, especially colored light, at its command.

The well-designed show window is, after all, but a stage, playing at all hours of the day and night to those on the street. Minus the advantage that the stage has in the spoken word, the music, and with an audience that is constantly moving, the show window must slow up, or stop, the street audience, and convey impressions quickly—strongly lasting impressions that end in desire to buy.

Color, when properly used, is beyond a doubt the most superior medium for the creation of appearances that possess a variety of appeal, that can be impressive and effective.

Lighting Equipment

The ideal show window should be equipped with several circuits overhead; with footlights well concealed at the bottom; with some well concealed units at the sides, if possible, and with one or two spotlights hidden overhead. The overhead circuits make it possible, with modern lighting equipment having colored filters, to utilize floods of colored light as deeply tinted as a particular display demands. The footlights are utilized for sending a sufficient amount of light upwards and backward to illuminate the shadows caused by the dominant downward light. The side lights should not be installed unless they can be concealed. If installed, they should be placed high and used only to give dominant oblique shadows which are natural and often desirable. They are the least necessary lighting equipment in the window.

With modern lighting equipment, which includes filters for obtaining colored light, it is possible to obtain any color of light or any depth of tint. These filters can be obtained as colored-glass accessories in the form of caps, globes, disks, plates, and gelatin sheets, depending upon the reflector, and in such colors as red, amber, green, and blue. These are sufficient to obtain, by mixture, any tint desired. By mixing uncolored light with colored light a tint will result.

The modern artificial daylight lamps have been used effectively in show windows. They provide not only a distinctively different light than ordinary

EVERY MOVE HE SAVES...
saves you money

CRAFTSMEN work faster with Square "Gee" Unions on the job. Chamfered for a flying start, the precision threads speed the way to a tight, lasting joint. Grabler's extra care in manufacture and triple inspection of every union keeps misfits and defectives from slowing up work. Dependable uniformity in every detail assures a better job . . . done faster. Your men save moves . . . you save money . . . when you say Square "Gees".

The **SQUARE "GEE"** *Line*

STANDARD AND EXTRA HEAVY MALLEABLE FITTINGS . . . STANDARD AND GROUND JOINT UNIONS . . . RAIL FITTINGS . . . STANDARD CAST IRON STEAM FITTINGS STANDARD AND PATENTED CAST IRON DRAINAGE FITTINGS . . . STANDARD AND EXTRA HEAVY BRASS FITTINGS . . . BRASS UNIONS . . . STEEL AND BRASS NIPPLES . . . HANGERS . . . FLOOR AND CEILING PLATES

THE GRABLER MANUFACTURING COMPANY
6565 Broadway · Cleveland, Ohio
Warehouses: New York · Chicago · Los Angeles · San Francisco

YOUR FITTING PROBLEM IS SOLVED WHEN YOU SAY SQUARE "GEES"

SQUARE Pipe **"GEE" Fittings**

MALLEABLE, CAST IRON DRAINAGE, BRASS

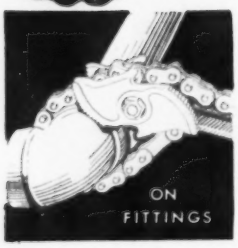
7 Sizes from ⅛ to 12″
PIPE and FITTINGS

TWO IN ONE

The double purpose back of Williams' NEW "Vulcan Superior" Tongs—ONE tool for BOTH fittings and pipe—means real economy and convenience. Two tools—one for fittings and one for pipe—are unnecessary. "Vulcan Superior" Tongs are always ready just "as is" for either class of work.

The "V" recess in the jaws, combined with general design, give "Vulcan Superior" a greater number of grips, or "bites", on both fittings and pipe than other tongs.

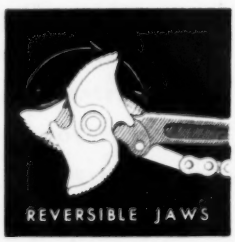
The only chain tong with reversible pipe-and-fittings jaws for double life. Proof-tested and CERTIFIED chain. Fully guaranteed.



Instant "bite" on fittings. No change in tong required.

Immediate grip on pipe without change in tong. No lost time.

"V" Recess in jaws assures a quick and firm grip on fittings.



When teeth wear, simply turn the jaws end for end.

J. H. WILLIAMS & CO.
"The Wrench People"
75 Spring St. New York City

Buy from your distributor

WILLIAMS
VULCAN
SUPERIOR
PIPE AND FITTINGS TONGS

WESTERN WAREHOUSE
SALES OFFICE, CHICAGO

WORKS:
BUFFALO, N. Y.

lamps, which makes the window conspicuous among its competitors, but this white light reveals colors with fidelity. Daylight lamps are particularly effective for white goods, for delicately tinted fabrics, and for very dark merchandise. They have solved many problems of displaying merchandise in true colors. Owing to the "colder" appearance of the window under daylight lamps, it is well to hang some "warm colored" draperies in the background in order to add some warmth to the general effect.

Probable Appearance of Materials Under Light of Various Colors

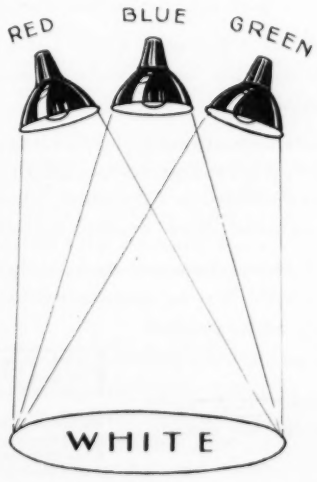
Color of Pigment	Color of Light			
	Blue	Green	Amber	Orange
Violet	Bluish-violet	Dark blue	Dark orange	Reddish purple
Blue	Intense blue	Blue green	Yellow-green	Bluish violet
Blue-green	Dark greenish blue	Green	Yellow-green tint	Blue black
Green	Dark greenish blue	Intense green	Intense yellow green	Dark red
Yellow	Dark yellow green	Yellow green	Intense yellow	Orange
Orange	Very dark orange	Greenish yellow	Intense orange	Scarlet
Red	Dark reddish purple	Dark orange	Intense orange red	Intense red
Purple	Purplish violet	Dark purple	Dark crimson	Purplish red

Color Mixing

The two spectral end-hues — violet and red — and the spectral mid-hue — green — constitute a set of color primaries of light. The term violet has been generally supplanted by the term blue, so that now the light color primaries are blue, green and red. By mixing light of these three primary colors in the proper proportions, light of any color can be produced. If equal proportions of the three primaries are mixed, white light will result. If equal portions of the light primaries are mixed in pairs the color secondaries will result. Blue and green form blue-green; green and red form yellow, and red and blue form purple. Thus, the light color secondaries are blue-green, yellow and purple.

It is quite possible to obtain these color-mixture results in practice, but it is necessary to use color media that provide light of a fair degree of purity. If each of three spotlights is equipped with a pure primary color media, and the beam of light from each is directed to overlapping areas on a white surface, it is possible, by adjusting the intensity of each, by means of a dimmer, to demonstrate very simply the fundamental principles of light color mixture. This method of color mixture is known as the Additive method, because it forms colors by direct addition and combination of the three light primaries. The Additive method of color mixture applies only to light.

The other form of color mixture is known as the subtractive method and applies to pigments and dyes. Pigment color mixture acts by subtraction. This subtraction takes place by virtue of absorption.



The two methods of mixing color as described in this article

Effect of Colored Light on Colored Objects

The principle underlying the action of colored light on the appearance of colored objects is very simple, even though its practical application is somewhat involved. Since objects are visible only because they reflect light to the eye, then colored objects appear colored because they pick out certain rays from the light that falls upon them, reflect these rays to the eye of the observer, where the color sensation is created, and absorb all the other rays.

Let us assume that we have a show window where green dresses are displayed and the window is lighted only by white light. By virtue of its physical nature this object is incapable of reflecting any but green light, and to the viewer the green dress appears green. Similarly a pure blue, red or yellow dress under the same conditions would appear in their true colors. If a white dress or piece of merchandise were substituted in place of the colored one and a red beam was projected from a con-

When you can't sell New Heating Systems

. . . Sell Modernization of the Old

In these times, when householders think twice about making major expenditures for entire new heating systems, it doesn't mean they don't want the superior service of modern improvements. They do—and eventually they will get them. But in the meantime, you can be doing a highly profitable business in auxiliary equipment that will bring the home owner some of the advantages of modernization without too large an outlay of money.

Your greatest opportunity in this line is Damper Regulation. Right in your community, there are hundreds of ready buyers—either without any form of damper regulation or with inferior devices that continually give trouble.

National advertising has acquainted these potential customers with the desirability of purchasing the best regulator available for this purpose —the Sylphon Regulator.

Over a million installations of this fool-proof, long-lived, all-metal damper regulator have built up a reputation for quality that is without equal. The field is unlimited—there is a Sylphon Damper Regulator for any type of steam, hot water or vapor heating system.

Moderate prices and liberal discounts make Sylphon Regulators easy and highly profitable to sell. We co-operate by furnishing free advertising literature with your name printed on each copy.

Go after this business—it is ready for you—now. Write for details.

FULTON Sylphon FOR TEMPERATURE CONTROL

FULTON SYLPHON CO.
KNOXVILLE, TENN., U.S.A.

European Representatives, Crosby Valve and Eng. Co., Ltd., 41-2 Foley St., London, W. 1., Eng.; Canadian Representatives, Darling Bros., Ltd., 140 Prince St., Montreal, Quebec, Canada.

Representatives in All Principal Cities in U. S. A.

cealed spotlight onto the object, the dress will appear red to the observer, since a white surface reflects all colors with equal facility. On the other hand, if the object in the window were black, it would always appear so regardless of the color of the incident light, because a black object absorbs all light and, since none is reflected to the eye, the object will appear black.

Although most available pigment colors and light colors are impure from the standpint of spectral color analysis, these impurities do not detract from their value; on the other hand, the indescribable difference between the many colors tends to lend interest, charm, beauty, and vividness to their use. When colored light is used in conjunction with colored objects, the composition of each, and the action of each on the other, must be carefully considered in advance, or the apparent visual results may prove disastrous. Except for the basic principle that a pigment will reflect light of the colors that compose the pigment, in proportion to the amounts of those colors present in both pigment and in the light, no rule-of-thumb can be given that will gauge the action of colored light on colored objects. There is but one safe way of determining results exactly, and that is by means of direct experiment with actual conditions.

A Changing Effect

One large store in Grand Rapids, Mich., is realizing the advantages of trimming with light in their show window lighting installation.

The system is made up of several rows of window reflectors recessed in the ceiling. Each row is controlled by the motor-driven dimming rheostat machine nearby in the basement. The several rows are equipped with clear lamps, and slip-on color caps. By combinations of colored light of varying intensities controlled by rheostats, any color may be obtained.

When the switch is closed, the motor-driven dimming rheostat will, by fading out or increasing the light output of the individual color rows, create a constantly changing color in the window throughout the entire spectrum. Supplemented by narrow beam window spotlights with clear lamps to cover the central figures in the window, the changing color cycle is in itself an attraction.

The methods of color mixture, both for light and for pigments are extremely valuable in planning show window displays. Especially will a knowledge of these two methods enable the display man to understand the often mystifying action of colored light in changing the appearance of colored objects. It will, therefore, help him to plan intelligently the color of his settings, his display and his lighting, so that these important factors will be sure to work together harmoniously and add to the effectiveness and beauty of the show window.

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Portland, Maine, Oil Burner Dealers Organize

Oil burner dealers and distributors in the territory embracing Portland, Me., and vicinity have organized an oil burner dealers' association. E. M. Farmer of the Gould-Farmer Co., Portland, is actively co-operating with other dealers in making this organization a success.

Display~Merchandise

Tusko Royal Pearl
(Concealed Hinge)

No. 40

A prominent *Tuskoloid* Line Display will not only enhance the appearance of your showroom but will bring you many sales.

Tuskoloid is outstanding. It attracts attention because it is easy for your prospective buyer to see its many advantages and qualities. Then too, the line is complete. There is a wide assortment from which to choose.

Make *Tuskoloid* your standard line and make this your one source of supply.

Complete catalog sent upon request.

No. 60

THE PERFECT TANK & SEAT CO., Inc.
SYRACUSE :: NEW YORK

Profitable to sell . . . because it's profitable to OWN!
No other water heater on the market is made of finer materials. . . . No other heater offers more features of interest to the buyer, or more profit making possibilities for the plumber. Why don't you investigate? Write for the details of our attractive dealer proposition. . . . Today.
LOW First Cost
LOW Operating Cost
BIG PLUMBERS' PROFIT
6 to 6 CAPACITIES 15 to 1000 gallons
THE OHIO HEATER CO.
Columbus, Ohio, U. S. A.
Manufacturers of the
OHIO
Automatic
WATER HEATER
We sell through the plumbing trade exclusively

Live Questions Discussed at Northern California Federation Meeting

Featured by constructive discussions relating to the more pressing problems of the industry, and attended by master plumbers and their families residing within a radius of two hundred miles of San Jose, as well as many representatives from the manufacturing and jobbing branches, the second conference of the Northern California Federation of Plumbing and Heating Industries set up another milestone of progress at the gathering at the Sainte Claire hotel, San Jose, September 26.

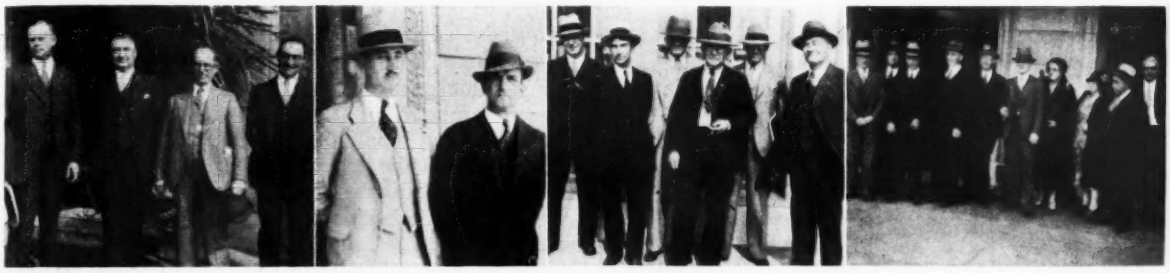
Following brief welcoming addresses by Charles A. Merritt of San Jose, a federation director, and William Biebrach, chairman of the local city council, a short talk on the advantages of association work was made by the president of the federation, Alexander Coleman, who is also past secretary of the N. A. M. P. "Most of us here tonight," said Mr. Coleman, referring to the National Association of Master Plumbers, "are enjoying the advantages of association work, as part of our country-wide organization that is made up of 400 locals and 12,000 individual plumber members."

An informative talk on the Building Congress idea was delivered by E. L. Norberg of the California State Architects Association, who explained that the Congress functions as a clearing house for the entire building industry.

At the conclusion of the banquet, the general meeting was called by President Coleman who introduced Albert Reynolds of San Francisco, manager in charge of dealer relations for the Pacific Gas & Electric Company. Speaking of co-ordinated effort between his company and the master plumbers who operate in the territory served by the P. G. & E., Mr. Reynolds made it plain that "we want to work with you. It is more important that we work together at such times as these, for the reason that depressions tend to break down co-operative effort."

The market for gas heating appliances—both room and water heaters—Mr. Reynolds stated, has been estimated by his company as follows: Room heaters, 100,000; and automatic water heaters, 120,000. At present, it was shown, only 25 per cent of the homes in the local district are equipped with automatics, while in the balance water is heated either by small manually operated appliances or by means of a coil in the firebox of the range or stove. There are likewise great possibilities, Mr. Reynolds pointed out, in the field of commercial gas heaters. "Modern hotels and apartment houses," he said, "are doing much to raise the standard of living, with the result that dwellers in hotels and apartment houses of today are the home-owners of tomorrow, and unless their homes are fitted with modern gas appliances they will be reluctant to move."

The Pacific Gas & Electric Company, Mr. Reynolds pointed out, is anxious to co-operate fully with the master plumber. In this connection the company's advertising policy has been altered to conform strictly to educational lines in the hope that such newspaper publicity will be supported and tied in with by master plumbers in every locality. He then displayed a folder carrying advertising layouts, much reduced in size, which is gotten out monthly for the following 30 days. These are



Left to right: F. Hudson, Fresno; William Gibb, Boyes Springs; President Alexander Coleman, San Francisco; Director C. A. Merritt, San Jose; John M. LaDieu, executive secretary, and J. V. Young of San Francisco, president, California state association; Harry Binns and Rees Jones, both of Bakersfield; T. J. Kennedy, Martinez; Ed. Simpson, Pacific Grove; James F. Mauzy, Walnut Creek; A. M. Fichtenmueller, Danville; photo at the right, group of master plumbers and their wives attending the meeting of the Northern California Federation of Plumbing and Heating Industries

sent to the trade so they will be in position intelligently to plan and lay out their own advertising copy in advance.

Quoting an expert in salesmanship, Mr. Reynolds closed his talk by giving three salient points in selling, particularly as applied to gas fixtures—(1) sell the service of your merchandise—that is, what it will do; (2) utilize your training and experience in the subject matter of your sales talk; (3) devote a moment or two to your pre-approach—that is, figure out the argument that will best fit the prospect.

Benjamin F. Blair of San Francisco, sales manager of the Standard Sanitary Mfg. Co., epitomized his talk in the opening sentence when he urged "Let's boost each other and our industry." Proving that this was no empty suggestion, Mr. Blair estimated that if every one of the 2,000 persons allied with the plumbing and heating industry in the San Francisco Bay region averaged an hour daily between shouting "hard times" and knocking the other fellow, this would amount to about 80 man-years annually. "Were this much time devoted to boosting, or at least to constructive thinking, there is no doubt at all but what it would find immediate reflection in the business of each of us." As a desirable stimulant to conditions, especially in small communities, Mr. Blair urged the necessity for at least one attractive showroom. The speaker also referred to the satisfactory volume, and a highly profitable one, being developed through the medium of overhauling and modernizing work.

John M. LaDieu, executive secretary of the California state association, spoke on the status of the master plumber as compared with the medical doctor. Speaking of the changes that are rapidly transpiring in the in-

GET AWAY FROM CUT-THROAT COMPETITION

If you are tired of taking business at a loss, if you agree that a fair profit must be earned on all work done, you will be interested in this new plan.

The present trend toward Automatic Heat—oil burners, automatic stokers, etc.—has created a lively demand for a better, more modern, more flexible heating system.

SARCO VAPOR HEATING SYSTEM

has been developed expressly to fill this need.

This system will be distributed through selected contractors who will enjoy protection of territory and special co-operation.

You can be one of these favored specialists.

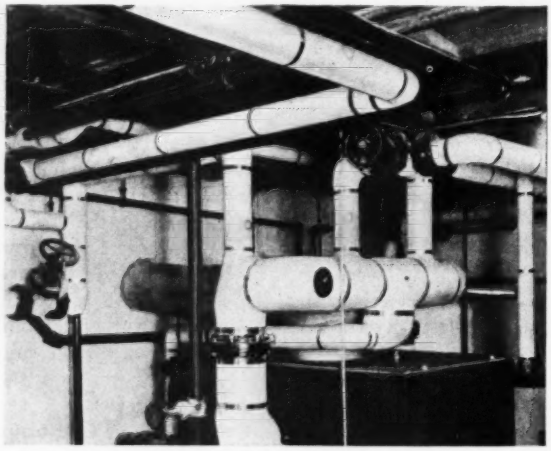
WRITE FOR FULL DETAILS TODAY. ADDRESS DEPARTMENT P. M.

SARCO COMPANY, INC.

183 MADISON AVENUE :: NEW YORK, N. Y.

BRANCHES IN PRINCIPAL CITIES

One Good Way to Insure That Needed "EXTRA PROFIT"



K & M has built up a plan to help the steamfitter sell low-pressure insulation—a plan designed for the man who seeks new sources of income and is willing to devote a little sales effort in order to cash in on this plan.

We can't tell the whole story here but we would like to send you a set of the material so that you can keep abreast of the times. Jobs such as pictured above mean extra profit on heating insulation. The coupon below will bring you the story of how to obtain that further profit.

Keasbey & Mattison Company
Ambler, Penna.

(Sign and send us this coupon)

10-DE

Yes! 1931

Send along the story of Extra Profit in Domestic Heat Insulation.

Name .....

Street .....

City .....

dustry, he pointed out the necessity for getting together frequently, as at federation meetings, so as to foresee these changes, if possible.

F. J. Chittenden of San Francisco, vice president and general manager of the Walworth-California Company, spoke on behalf of the wholesaler branch of the federation. At the outset, he defined the functions and responsibilities of the wholesaler, especially with regard to the elimination of "price-edges." The wholesaler, he maintained, should strive at all times to develop consumer good-will without encroaching upon the territory of the contractor. . . . His hearers apparently agreed with him when he said "We should snap out of our inferiority complex, and that goes for the contractor as well as the wholesaler." Deploring special deals and confidential discounts which have "proved a snare and a delusion in the past," the speaker added "We have passed through an era of volume at any price, and are now definitely in the era of profit at a fair price."

John L. E. Firmin of Los Gatos, secretary emeritus of the state association, gave an illuminating talk on the early days of organization work. Mr. Firmin concluded by drawing a parallel between conditions today and those obtaining in previous times of depression, referring to the years 1876-77 when every bank in San Francisco closed its doors. "Yes; times are close," said he, "but they have been much worse. Today we must watch our affairs more attentively than ever, bearing in mind that credit is one of the most important factors in business at this time."

Just prior to adjournment President Coleman announced that at the invitation of the Berkeley Merchant Plumbers Association it had been decided to hold the next federation meeting in that city, the date of which will be made known later.

Ice Used for Cooling

(Continued from Page 41)

make these readings. However, on the assembly room unit the temperature of the water delivered to the sprays ranged from 50 to 55 deg. Fahr.

The ice capacity of the unit installed is very near 2,000 lb, hence sufficient ice can be charged to last about sixteen hours or more.

The dimensions of the water tank of the unit are approximately 5 ft. x 5 ft. square x 6 in. deep. The ice is stacked up in half of this tank to a height of 4 or 5 ft. and the water reaches a height of only 4 or 5 in. When the tank is freshly charged with ice or has only a few hundred pounds in it, the water level is still 4 or 5 in. and the ice covers the same area of the pan at all times.

For the assembly room unit, we figured on one spray nozzle for each 325 cu. ft. of air washed, and this nozzle was to give 1½ gal. of water per minute. Nine of these nozzles were used, because the full capacity of our blower was 3,000 cu. ft. per minute. The other six nozzles were used primarily to clean off the eliminator plates and they were figured at 1.25 G.P.M. These figures were taken from tables on air washer design.

In the residence job tested and described, during the test the 1,000-lb. charge of ice, melting at the average

rate of 120 lb. per hour, lasted 8 1/3 hours. Figuring that cooling was needed only 12 hours of the 24, the consumption of ice on this day was 1,440 lb., and if ice costing $5.50 per 1,000 lb. were used, the cost of cooling was $7.92 for that day, or 66 cents per hour. If these may be taken as average figures, on the basis of a cooling season of 252 hours the cost of the ice would run $166.32, which probably is somewhat under the cost of operating the heating plant in the house under consideration for an entire heating season.

As already indicated, variations may occur in these figures. The cooling may be confined to the first floor living rooms and even all of these may not be cooled. Further, from a human comfort standpoint, usually the greatest need for relief from the heat is toward the end of the hot spell, when the individual's resistance to the heat becomes lowered. Accordingly, the thermometer may register 87 deg. Fahr. and above for some time before the occupants of the home feel the need of cooling. The construction of the house and its insulating qualities also influence the amount of cooling needed.

The two systems described and illustrated here are typical examples of air conditioning with ice in small establishments. In the past two years many similar installations have been made. In Baltimore, Cleveland, St. Louis, Kansas City, and New York, theatres with seating capacities of 2,500 and over have been equipped with air conditioning systems using ice. The railroads are pre-cooling sleeping cars for night runs by attaching portable cooling units, using ice, to the cars for a short period before the train departs. The Pullman Company and the railroads also are using ice in cooling systems permanently installed in many of their new cars.

One large ventilating company recently calculated from the weather bureau records that, in the city of New York in the summer of 1930, which was an unusually warm summer, there were just twenty-one days during which air cooling was actually required for comfort conditions. In the average establishment, whether restaurant, theatre, retail store, office or residence, air cooling probably would not be required more than twelve hours per day. Twelve hours per day for 21 days, or 252 hours of cooling, are required for comfort during an average year.

Although all of the installations utilizing ice that have been made are in the development stage, indications are that ice as a source of cold water in air conditioning will be considered favorably by engineers in commercial establishments as well as residences.

◆

St. Louis Master Plumbers Open Bowling Season

The bowling league of the St. Louis, Mo., Master Plumbers' Association is now in full swing and the members are looking forward to many enjoyable winter evenings.

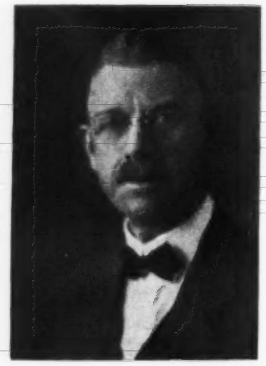
The Arway Alley, at Kingshighway and Arsenal street, were selected as the official alleys and every Wednesday evening a good crowd is on hand. While the men are bowling on the tournament alleys the ladies also have games of their own on adjoining alleys.

The officers of the bowling league are: Henry Ryffel, president; Charles Burgess, vice president; John D. Els, secretary; and Roger Jarvis, treasurer.

RIVERSIDE
TANKS
ALL ENDURING COPPER
Riverside 20-Year Guaranteed Copper Boilers are in a class by themselves! These sturdy boilers carry this guarantee when the boiler is properly installed. Why not pay a little more and give your customer clean, rustless hot water indefinitely?
Remember! All copper boilers are not alike. When you buy a copper boiler, you pay enough to have one that will stand up for years and years. That's what you get if you order from your Jobber, the Riverside 20-Year Guaranteed Copper Boiler.
Attractive circulars on this boiler sent to you with your imprint, no charge
20 YEAR GUARANTEE
Manufactured Exclusively by
RIVERSIDE BOILER WORKS, INC.
Manufacturers of
Tanks for the American Home
CAMBRIDGE, MASS., U. S. A.
New York Office: 11 West 42nd St.

Higher Mark-Up and Mail Order Competition

— Are discussed by Utah masters



Charles M. Swinnerton

AT THE semi-annual convention of the Utah State Association of Plumbing and Heating Contractors, held in Salt Lake City on September 19, Charles M. Swinnerton of Los Angeles, Calif., a director of the National Association of Master Plumbers, emphasized the need for a higher-mark-up if the contractor is to meet with success in his merchandising efforts.

George W. Bruerton, president of the association, stressed the seriousness of mail order competition and direct selling and asked for the assistance of manufacturers and wholesalers in working out a general co-operative plan for the benefit of all three branches of the industry.

Walter Adams of the Pacific States Cast Iron Pipe Co., Provo, Utah, addressed the convention on the need for co-operative effort between manufacturer, wholesaler and contractor. His address brought forth discussion of this subject by Ralph Ludlow of the Mountain States Supply Co., Val W. Palmer of Logan, a member of the board of governors of the state association, and Mr. Swinnerton. This interesting address and discussion will appear in a later issue.

Says Contractor Needs Higher Mark-up

"The policy of the jobbers of selling at a 10 per cent mark-up through the plumber, is ridiculous and will result in nothing except bankruptcy of the plumbers," said Mr. Swinnerton in his talk. "There is no concern that can sell on a 10 per cent gross profit when its overhead is twenty or twenty-five per cent. The master plumber, as the outlet for the industry, must be given a reasonable margin of profit, otherwise he can not exist. At the present time your various associations are the only line of defense between you and nothing. A larger membership in the Utah association must be built so that the master plumber can demand the usual rights of the retail merchant. The association should also take in the little fellow who is simply endeavoring to get a start by taking what jobs he can secure. While he may not have any particular influence at the present time, you must remember that everyone received their start in the industry in the same way.

"There is one impression that I would like to correct at this time, viz, that the manufacturers and jobbers contribute to the support of the National association. That impression is entirely erroneous. The National organization is supported solely by the per capita tax. At the present time I am making a survey of the conditions in the states under my control, California, Arizona, Nevada and Utah, and will report the findings of my investigation at the next meeting of the board of directors of the National association. This same investigation is being made by various members of the National board throughout the country."

Cites Danger of Mail Order Competition

President Bruerton, in addressing the convention, said in part: "Despite the tendency for better plumbing, conditions are far from satisfactory in the plumbing and heating industry in Utah. I am informed that there are approximately 234 contracting plumbers in this territory, and that 154 of these have been placed on a cash basis by the supply houses.

"It seems to me that among the factors causing this trouble is the growing mail order competition and direct selling. Many master plumbers are also too willing to sell only labor. This is probably due to the fact that the public has been educated to believe that there is an exorbitant profit in plumbing, and that by proper methods of inducing extreme competition the plumbing installation can be secured at greatly reduced figures.

"The direct selling houses are today advertising in the newspapers and by means of the radio. On the other hand the merchant plumber is taking work at such prices as will leave nothing for advertising. Today the master who figures 20 per cent gross profit on a job brings the bid so high as to make him look foolish.

"It is only through the co-operation of the three branches of the industry that the efforts to place it on a higher level will be accomplished. One of the discouraging factors is the lack of interest on the part of plumbers, who apparently do not realize that we must either have new activity in the association or else quit altogether."

President Bruerton said he regretted that it was necessary for the association to discontinue the services of W. A. Rupea, who has served for the past several

"Can't help doing a real job with PIPE like this"

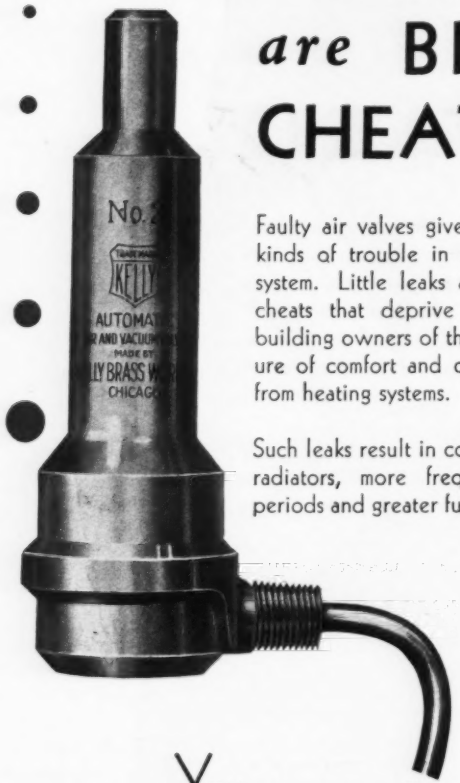
"SPANG" WELDED STEEL PIPE is the pipefitters' joy . . . soft and easy to work . . . with that distinctive steel texture peculiar to all "SPANG" WELDED STEEL PIPE. This makes threading a pleasure . . . assures a good, tight joint and a finished plumbing job that is a credit to the men who installed it. For all around 100 per cent satisfaction, specify "SPANG"—the product of master pipe craftsmen.

SPANG, CHALFANT & CO., INC.
GENERAL OFFICES, CLARK BUILDING
PITTSBURGH, PA.

Sales Offices: New York, Boston, Pittsburgh, Chicago, St. Louis, Tulsa, Los Angeles, Dallas, San Francisco
Welded Mills: Etna, Penna., Sharpsburg, Penna.
Seamless Mills: Ambridge, Penna.

SPANG
WELDED STEEL PIPE

Little Leaks *are* BIG CHEATS!



Faulty air valves give rise to all kinds of trouble in the heating system. Little leaks are the big cheats that deprive home and building owners of the full measure of comfort and convenience from heating systems.

Such leaks result in cold or balky radiators, more frequent firing periods and greater fuel costs.

YOU can put an effective stop to radiator valve trouble for your customers with one of the valves from KELLY'S complete line.

Keep supplied with KELLY Valves and use them to check the heating systems in your community. KELLY Valves operate under all pressures up to 10 pounds, venting the radiator against air and closing against steam and water.

KELLYS are completely automatic, require no adjustment and are absolutely tamper-proof. Guaranteed for 5 years. Write today for complete information.

KELLY BRASS WORKS

226-32 W. ONTARIO ST.
CHICAGO

months as field secretary. He expressed the hope that the association would soon be strong enough financially to again employ Mr. Rupea. The latter followed with a talk on the duties of an association manager. He suggested that the jobber add a small percentage to his selling price on all materials as a means of securing funds for the promotion of the industry. Upon the recommendation of Henry C. Blumenthal, a past president of the state association, the delegates went on record as favoring such a plan.

Morgan S. Lott of Lehi, a member of the board of governors, told of the various meetings held by that group since the last convention was held. Subjects discussed at these meetings were: Budgeting of the association's funds; plumbing laws in the smaller towns in the state; co-operation with the wholesalers; and the sale of gas equipment and appliances.

Marshall Erickson and Charles J. Dietz, both of Salt Lake City, and Alex Mortensen of Provo, composed the auditing committee appointed by the president. They reported the association's books to be in good shape.

At the banquet in the evening, a humorous sketch in two acts was put on by John Reeves and Mrs. Rupea. Mr. Swinnerton spoke briefly, complimenting the ladies on their help in promoting the industry. He said there were approximately 3,500 members of the National auxiliary working to this end. Frank Peterson, a national organizer for the journeymen, urged that steps be taken to secure the separation of plumbing, heating and ventilating contracts from the general contract on construction work. Mr. Ludlow, President Bruerton, Mr. Rupea and Mr. Blumenthal also addressed the banquet gathering.

The next convention will probably be held in March, 1932, at which time new officers will be elected.

◆

Representative of Reznor Mfg. Co. Addresses Philadelphia Association

At the September meeting of the Philadelphia Master Plumbers Association, Maney J. Feeney, president of the association, received congratulations on his re-appointment as a director of the National association. It is the sincere wish of every Philadelphia member, that Mr. Feeney will have great success in the coming year.

Plans are now under way for the annual "Ladies' Night." George Hicks was appointed chairman of the committee.

During the educational hour, an address was given by H. Edsil Barr, engineer of the Reznor Mfg. Co., of Mercer, Pa.

An eight weeks' course in "Salesmanship" has been suggested by the Plumbing and Heating Industries Bureau. However, no definite action was taken regarding this matter, although the suggestion was met with approval by the members of the association.

At the close of the meeting the members adjourned to the basement, where a buffet lunch was served by the Reznor Mfg. Co.

◆

The firm of F. G. Cook and Son, Kenmore, N. Y., has received a contract to furnish and install heating equipment in a $300,000 junior high school, now under construction in Geneseo, N. Y.

Our Readers Tell Us

Likes "Automatic Heat"

To the Editor:

You are to be congratulated on the new editorial service you have instituted in DOMESTIC ENGINEERING, under the title of "Automatic Heat" and also in the fine way this subject has been treated in the first few issues.

We believe that this section in "Automatic Heat" will immensely increase the interest in DOMESTIC ENGINEERING, and will, at the same time, render a real service to the heating trade at large.

(Signed) The Bryant Heater & Mfg. Co.
Lyle C. Harvey, Sales Manager.

Plumbing Jokes Are a Detriment

To the Editor:

I am attaching a circular from a manufacturer trying to sell merchandise and in their "line of laugh" they reprint one of the oldest and stalest of plumbing jokes that I have ever heard.

Such jokes are a detriment to the plumbing business and it looks like a concern trying to sell plumbing merchandise would refrain from printing them. It is bad enough when our press prints them.

The plumber has gone a long way towards eliminating them and I believe it would be well for your paper to comment that the wits or half-wits of the plumbing business refrain from publishing them in publications through which they hope to obtain business.

Beaumont, Tex. (Signed) Albert J. Coburn.

Bond for Pennsylvania Plumbers

To the Editor:

On June 24, 1931, I wrote you to make correction in the statement of your issue of May 30, 1931, in the article under the heading of "Reports of Legislative Work," with reference to House Bill No. 842.

I find that through some error I did not make myself clear as to what part the Philadelphia Association of Master Plumbers and Brotherhood Master Plumbers' Association of Philadelphia had played in connection with this bill. Permit me, therefore, to further correct myself, as follows:

The said House Bill No. 842 was originated and sponsored by the Philadelphia Association of Master Plumbers, in which bill there was a provision that registered master plumbers shall file a bond in the sum of $2,500 before being permitted to register with the Department of Health. The Brotherhood Master Plumbers' Association of Philadelphia took up the fight against this bill, and engaged my services, as counsel, to fight the same in the House, and after this fight was taken up by me for the Brotherhood Master Plumbers' Association of Philadelphia, the said bill, by agreement, was further amended to provide for a bond in the sum of $250 instead of $2,500, both associations agreeing to this change. The amount of the bond was fought in this bill, as being too excessive, because it would have virtually worked a great hardship on the majority of the plumbing trade of Philadelphia, who are unable to supply a bond of such proportion.

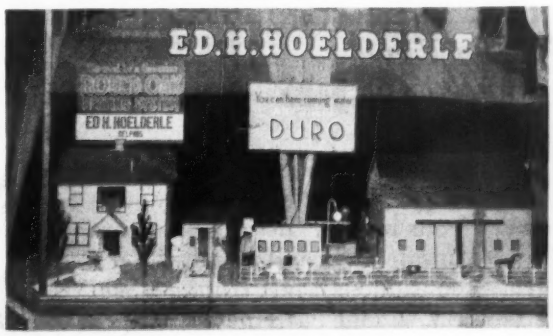
(Signed) Charles S. Shotz,
Philadelphia, Pa.

A Show Window That Attracted Much Attention

To the Editor:

Here is a picture of a window display I recently made and which is a real advertisement. I watched this window for about a week after it was installed (during which time we had a street fair in our city), and there wasn't a minute that from 4 to 40 people weren't standing in front of same, looking it over and reading the advertising.

All buildings in the window are constructed of galvanized iron and painted. The house shows the bathroom complete with fixtures and running water in bathtub and a child taking a bath. The kitchen is also open



Ed. H. Hoelderle's window display in his establishment at Delphos, Ohio

to the public and contains a sink, gas range, refrigerator, cabinet, table, and two chairs, running water to sink.

The fountain in front of the house is made of galvanized iron and stuccoed, with running water to same, and with small ducks in the small pond surrounding the fountain.

The drive to the garage is made with a drain and a man standing beside same is washing a car, holding in his hand a nozzle of a small hose with running water from the sillcock on the house.

There is also running water to the chicken coop, hog house and stock tank, a light on a pole in the barn yard, a small fence around same with miniature horses, cows, pigs and chickens in the yard.

The house, barn and chicken coop are electrically lighted with 110 volts. I also had a small outdoor privy painted a different color, standing at the rear of display

with a sign "For Sale—We Now Have Modern Plumbing."

There was an imitation cement highway in front of the display and three small trees in front of the house yard.

This display has received so much attention that I thought it a good thing to pass the idea on to other plumbers.

This is a novelty, which at the same time puts across the desirability and comfort of modern sanitation.

Delphos, Ohio. Ed. H. Hoelderle.

This Editor Gives the Plumber a Square Deal

To the Editor:

We are sending you under separate cover an editorial which appeared in our local paper, showing the improved sentiment toward the plumber.

We believe that you will be glad to reproduce this editorial in your magazine.

The writer has been connected with the plumbing business in almost every angle since 1905, and there has been a great improvement in the personnel in the contracting plumbers during that period.

With this improvement of the master plumbers, we believe that within a few more years we will be placed among the more respected industries.

Sarasota, Fla. (Signed) J. B. Green.

(Here's the editorial.)

The Plumber Turns

Once there was a mother-in-law so nice nobody could joke about her. Here is a plumber who has something to say about going back for tools.

He was called to the top floor of a 17-story building to fix the water cooling system. He walked up because the power was off and the elevator not running. He was not told what was needed, but was given only a vague instruction to look over the job and do what was necessary. He took his measurements, needed some large pieces of pipe and went, perforce, to the shop to cut them on the machine. He then carried 28 feet of pipe and a lot of cast-iron fittings up the 17 stories. He made the repair properly and was off for another job in two hours and a half.

The plumbing boss happened to go over to see how the job was coming on and spoke of the 17 flights of stairs in the hearing of a man on a broadcasting station staff. This man fixed the story up a little and soon it was floating out on the circumambient air that the plumber went, like the noble Duke of York, up the great high hill and down again and up again because of missing tools.

The plumber says he forgot nothing, did the job quickly and did it right and got out, and if anybody thinks 17 flights of stairs twice on a hot morning is funny, he doesn't.

In which we agree with the plumber. Most plumbers of our acquaintance are cheerful and honest people, doing very necessary and often disagreeable work under difficulties, and probably charging no more than we would charge under like circumstances.—*Sarasota (Fla.) Herald.*

You Know
PLUGGED BOILERS

are false economy.....They cut down your sales.....They steal your profits. Besides, they are unsafe and can't stand winter's continuous firing. *Up and at 'em!* Show your customers where

PENNSYLVANIA RANGE BOILERS

will save them money by eliminating constant repairs and worry about their unsafe boilers.

Sold Only Thru Jobbers

Complete line of ALL WELDED and RIVETED AND WELDED Galvanized Boilers.

JOBBERS: Write us for sample of any boiler for 30 day inspection.

Pennsylvania Range Boiler Company
Established 1895
24th & Washington Ave. Philadelphia, Penna.

Because the Jarecki line is complete, you are assured of a size and model exactly suited to your requirements. Because Jarecki combines 79 years' experience with the world's most modern production methods, you are assured of unusually efficient design, workmanship and construction. Because Jarecki Valves and Fittings are tested BEYOND their working pressure ratings, you are assured of thoroughly dependable performance. Isn't this the type of service you are looking for?

Jarecki
MANUFACTURING COMPANY
ERIE, PA., U.S.A.

JARECKI VALVES AND FITTINGS

ANSWERED

A few of the Questions of most general interest asked by readers and answered by our engineers

In this issue

1—How to Remedy Several Defects in an Old Gravity Vapor Heating System

2—An Hydraulic Ram Installation Which Has never Worked Right

—1—

To the Editor:

Recently I had occasion to repair an old system of gravity vapor heating in which the steam mains and dry returns are run close to the ceiling and are well above the boiler water line—say about 4 ft. The ends of the steam main are connected direct to the dry return without the use of a wet return to carry back the drip and also without the use of radiator traps. One air eliminator is located near the boiler and, at the end of the return main, a 60 ft. length of 1½ in. pipe is used as a condenser for the dry return.

The radiator connections are top and bottom—same end and no steam traps are used on the radiators. I claim that, if the radiators are connected with the modulating supply valve at the top on one end and a steam trap at the lower opposite end using an eccentric bushing with same, the radiators would heat throughout.

Another problem is that my employer insists that connections made to steam radiators on a gravity one-pipe steam system will not function properly unless made in the manner illustrated in sketch herewith, this showing a typical connection at second floor with a supply from below and a continuation of the riser for radiators on upper floors. The connection at each floor is made in this manner excepting the top floor where no continuation of the riser is necessary. This connection makes a very untidy condition on the ceiling below.

Will you also advise me as to a connection for radiators which will take care of expansion in the riser and not lift radiators off the floor?

Maryland. H. B. S.

From the description of the vapor job which is outlined it is no wonder that troubles in operation are experienced. The radiator connections should be top and bottom opposite ends and every radiator should have a trap on its return unless there is an orifice in the supply to limit the flow of steam into the radiator. The steam main cannot be connected direct into a dry return without the use of a thermostatic trap or water seal to

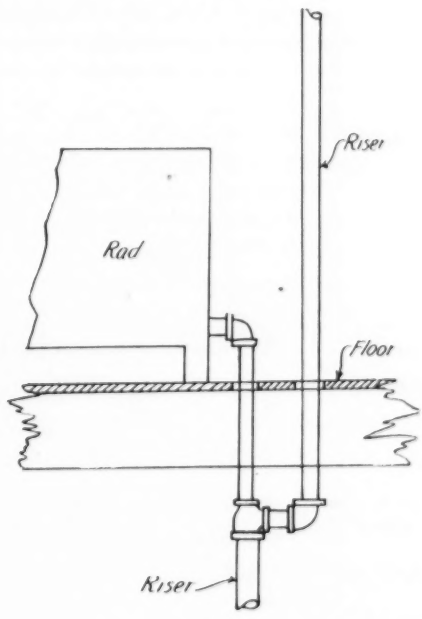


Fig. 1

keep the steam from rushing into the return main. A wet return for the steam main drips makes the use of a trap unnecessary as it supplies automatically a water seal so that no steam can find its way down in to the line.

In installing any system of vapor heating a layout

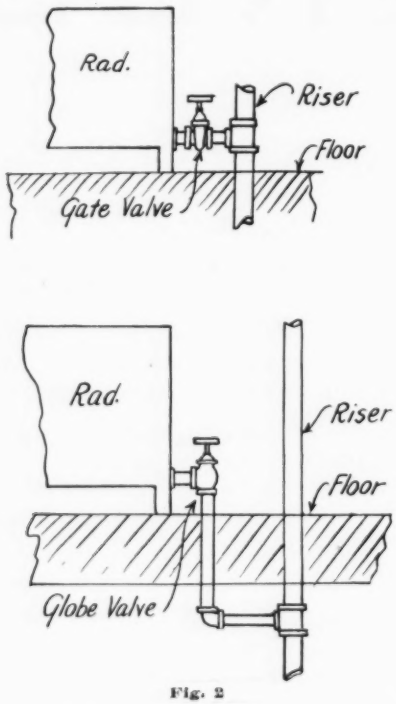


Fig. 2

should be secured from the manufacturer which layout should be followed with care as otherwise the contractor

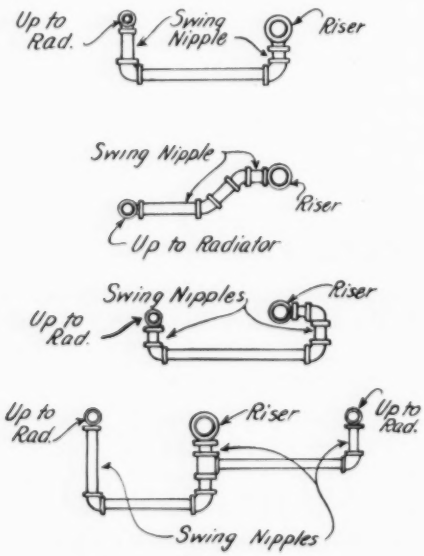


Fig. 3

not only assumes responsibility for alterations made, but also is likely to discredit the manufacturer by unsatisfactory operation after the system is put in service.

In regard to the matter of steam risers for one pipe gravity steam jobs with radiator connections made as illustrated in Fig. 1, it can be said that this arrangement is totally unnecessary. The arrangement shown sometimes is used on gravity hot water jobs where the idea is to favor the lower radiators on the line by making the flow to the radiators above not quite as direct as it would be with the ordinary straight riser. As far as steam flow is concerned the connections shown in Fig. 2 will prove just as satisfactory as those shown in Fig. 1 and are not only much cheaper to install but also are much more sightly.

There are several methods of providing for expansion in the riser so that it will not lift the radiators off the floor. Nearly all of these are based on some method of making a swing joint in the runout to the radiator. The chief thing to remember in making swing joints is that two nipples must be provided and arranged with elbows in such a manner that the riser can move up and down and the branch will turn slightly on the nipples without raising the radiator at the end of the branch. Fig. 3 illustrates some of the common methods of allowing for expansion in this manner. Care must be taken to make the pitch of the runout sufficient to allow the riser to expand without raising the end of the branch at the riser to a point where the required pitch in the branch is lost. This is accomplished by connecting into the riser at a point as much lower as the expansion of the riser amounts to at the particular branch in question.

—2—

To the Editor:

The accompanying sketch shows a diagram of a hydraulic ram which I recently installed. This has not worked right from the start.

Should there be a vent on the discharge pipe from the

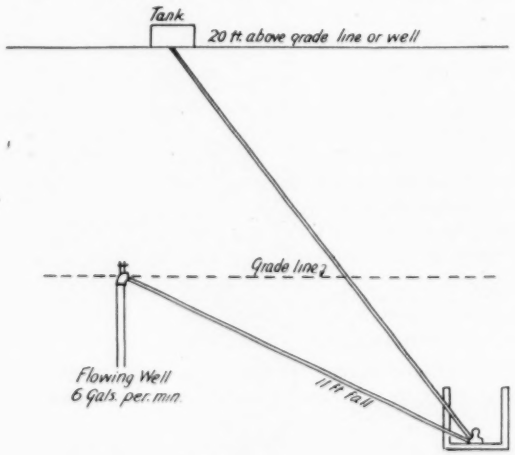


Fig. 1

well to the ram, or should there be a vent on top of the pipe on well?

It acts as if there were air pressure somewhere as it can only be left going for a short time.

Michigan. C. L. A.

It is quite possible that air is accumulating at the top of the pipe from the well. This may be due to air leaks

"I'll see it through if you will!"

"THEY tell me there's five or six million of us —out of jobs.

"I know that's not your fault, any more than it is mine.

"But that doesn't change the fact that some of us right now are in a pretty tough spot—with families to worry about—and a workless winter ahead.

"Understand, we're not begging. We'd rather have a job than anything else you can give us.

"We're not scared, either. If you think the good old U. S. A. is in a bad way more than temporarily, just try to figure out some other place you'd rather be.

"But, until times do loosen up, we've got to have a little help.

"So I'm asking *you* to give us a lift, just as I would give one to you if I stood in your shoes and you in mine.

"Now don't send me any money—that isn't the idea. Don't even send any to the Committee which signs this appeal.

"The best way to help us is to give as generously as you can to your local welfare and charity organizations, your community chest or your emergency relief committee if you have one.

"That's my story, the rest is up to you.

"I'll see it through—if *you* will!"

—Unemployed, 1931

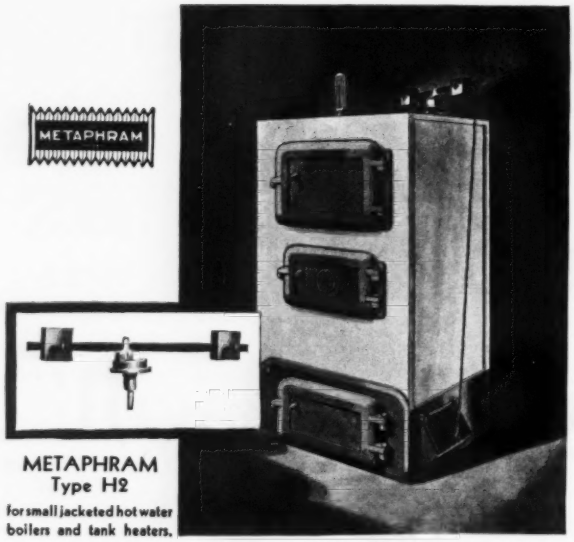
THE PRESIDENT'S ORGANIZATION ON UNEMPLOYMENT RELIEF

Walter S. Gifford
Director

COMMITTEE ON MOBILIZATION OF RELIEF RESOURCES

Owen D. Young
Chairman

The President's Organization on Unemployment Relief is non-political and non-sectarian. Its purpose is to aid local welfare and relief agencies everywhere to provide for local needs. All facilities for the nation-wide program, including this advertisement, have been furnished to the Committee without cost



METAPHRAM
Type H2
for small jacketed hot water boilers and tank heaters.

METAPHRAM Gradual Control
covers the entire range of domestic hot water and low pressure boilers and tank heaters, either gas, oil or coal fired.

Descriptive Bulletins on Request

NATIONAL REGULATOR CO.
2317 KNOX AVENUE CHICAGO

BURKS
SUPER-TURBINE
PUMPS
ONLY ONE MOVING PART

WATER SYSTEMS
Require Air-Pumping Too

Water System pumps must be capable of handling *air* as well as *water* to be successful.

The Burks Super Turbine Pump will replenish the air supply in hydro-pneumatic tanks *quickly* and *surely*. It pumps air equally as well as it pumps water, and to the *full* water pressure rating of the pump!

Our Condensation Return Units are also equipped with Burks Super Turbine Pumps.

Send for:
Water System Bulletin No. 94-C
Condensation Return Bulletin No. 95

SERIES 8750
HOME WATER
SYSTEM

DECATUR PUMP COMPANY DECATUR, ILLINOIS

at joints in the pipe or simply due to a change in temperature. The water coming from the well is, no doubt, somewhat colder than the atmosphere and this results in the warming of the water as it passes through the pipe line. Then, in turn this results in the release of some of the air and gases which might be dissolved in the water. The released air or gases naturally accumulate at the top of the pipe of the well.

It is suggested that you try an air vent at that point as apparently there is no other reason for the ram not working properly. We should be pleased to know the results of the use of such an air vent.

Questions Answered and Discussed by Readers

How the Question Was Answered

The following question was asked in the issue of September 19, and the accompanying answer is by a reader:

A certain building has a roof composed of ¼ in. thick composition roofing, 3 in. of cinder concrete fill and a 4 in. concrete slab. There is no hung ceiling under this roof and if artificial means are used to maintain a relative humidity of 60 per cent and an inside temperature of 70 deg. F during the winter, is there any danger of sweating on the under side of the roof? What thickness of cork insulation would be required to prevent condensation on the underside of the roof if such condensation would occur?

How Would You Answer This Question?

A heating plant has the following loads: 10,000 *sq. ft. of tubular cast iron radiation,* 2,000 *sq. ft. of cast iron wall radiation, three unit heaters delivering* 86,000 *Btu per hr., each, and the heating of a maximum of* 150 *gals. of water per hour from* 50 *to* 150 *F. What will be the load on the boiler in equivalent direct radiation of* 240 *Btu?*

Answers based upon your experience, and suitable, will be paid for and published in the November 14 issue.

—1—

THE latter part of this question furnishes the answer to the first part because, if it is possible to ascertain that insulation is necessary to prevent condensation, it is, of course, evident that without insulation sweating on the underside of the roof would occur. On the other hand, if it can be shown that no insulation is necessary, then it follows that no condensation would be present even without any insulation at all.

First it will be necessary to compute the heat loss co-efficient for the construction proposed without considering the proposed insulation. The conductivities for the various materials listed are as follows:

¼-in. composition roofing.....1.325 per in.
3-in. cinder concrete fill.....5.20 per in.
4-in. stone concrete slab.....8.30 per in.

and the co-efficient will be the reciprocal of the sum of the resistances taking the outer surface at 4.02 and the inner surface at 1.34, thus:

$$\frac{1}{4.02} + \frac{0.25}{1.325} + \frac{3}{5.20} + \frac{4}{8.30} + \frac{1}{1.34}$$

or

$$\frac{1}{0.254 + 0.19 + 0.575 + 0.48 + 0.75}$$

or

$$\frac{1}{2.249} \text{ which is } 0.44$$

Having obtained this co-efficient of the construction as proposed without insulation the matter of insulation can be computed from the formula:

$$\text{Thickness} = \left\{ \frac{(Ti - To)}{C \times (Ti - Tdp)} = \frac{1}{U} \right\} \times Ui$$

when

Ti is the inside temperature in degrees Fahr. under the roof;

To is the minimum temperature outside—in this case zero;

C is the conductance factor for the inside surface which already has been used in the previous calculation for the roof co-efficient and was taken as 1.34;

Tdp is the due point temperature of air under roof, or 55 Fahr.;

U is the roof co-efficient just calculated as 0.44;

Ui is the conductivity of the insulation per inch in Btu. per hr.

This formula may now be simplified to

$$\text{Thickness of insulation} = \left\{ \frac{Ti}{1.34 \times (Ti - Tdp)} - \frac{1}{U} \right\} \times Ui$$

and substituting for the various quantities gives

$$\text{Thickness} = \left\{ \frac{75}{1.34 \times (75 - 55)} - \frac{1}{0.44} \right\} \times Ui$$

or

$$(2.8 - 2.27) \times 0.32$$

or

0.16 in.

From this it is evident that, to prevent condensation on the under side of the roof, cork 0.16 in. thick would be required and this would mean ½ in., or 1 in. cork, depending upon what is available commercially. The fact that insulation is required indicates very plainly that without it condensation would occur.

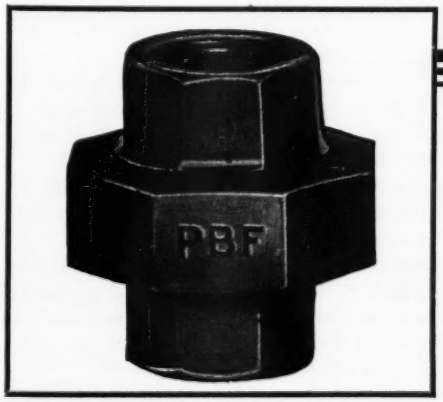
◆

Attorney General Renders Opinion on Wisconsin Plumbing Laws

Chapter 431 of the plumbing laws of 1931 extends the plumbing license law to every city and village in Wisconsin having a water works and sewerage system, or to any resident of a metropolitan sewerage system, according to an opinion rendered to Dr. C. A. Harper, Wisconsin state health officer, by the attorney general's department at Madison.

According to the opinion, written by J. E. Messerschmidt, any master plumber engaged in business when the act was passed can obtain a license without examination if he applies within 90 days after the passage of the act, and this exemption extends to any person having an interest in the plumbing business.

Persons engaged in journeymen plumbing work at the time the act was passed must also be given journeymen's licenses if they apply within 90 days.



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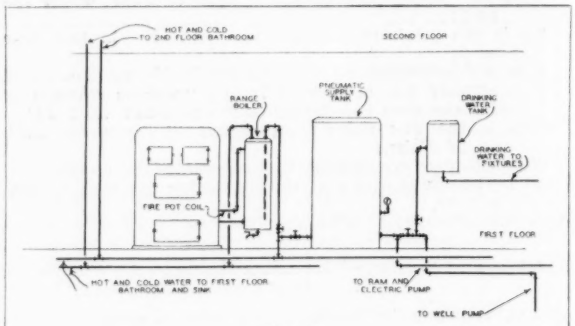
The Evolution of an Interesting Country Water Supply System

(Continued from Page 43)

to the elevated tank, the brook had to be dammed three or four hundred feet above the ram, as shown. Naturally the drive pipe could not be buried, owing to the heavy boulders with which the brook is lined. This made it necessary to expose the drive pipe, and owing to freezing, this equipment was impossible for winter use.

Referring now to the pumped supply, the suction pipe simply runs down into a deep part of the brook, and as the brook never fails, the supply is never interrupted.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RANGE BOILER
PNEUMATIC SUPPLY TANK
DRINKING WATER TANK
DRINKING WATER TO FIXTURES
FIRE POT COIL
FIRST FLOOR
HOT AND COLD WATER TO FIRST FLOOR BATHROOM AND SINK
TO RAM AND ELECTRIC PUMP
TO WELL PUMP

Fig. 5

The two supplies are joined together near the elevated tank, and either or both may be used.

Air trouble is taken care of by the vent which rises above the tank.

Fig. 5 shows the water supply equipment inside the house.

The range boiler is heated by a five-foot coil, it being on the same level and nearby.

It will be noted that the tank can be supplied by the pump, by the ram, and even by the hand pump connected with the well.

Even under the modern conditions that now exist, the pumped well supply is still used for drinking purposes, and probably will so continue until the artesian well is available. The water from the brook is perfectly safe, but not so cold or so palatable as the well water.

A separate small tank is used for storing the drinking water. It holds a sufficient amount for a day's supply and is drained off each morning, ensuring a daily fresh supply.

A point that can be gained from our story is that at every stage in the evolution of this supply system, it has probably seemed to the owner and perhaps also to the plumbing contractor, that nothing further remained to be done—that as far as plumbing was concerned, the equipment was complete. Many things happen, however, and will always happen to change conditions and to produce new possibilities. When the second owner took charge, for instance, it was probably not foreseen that later the equipment would be required to meet all-year-round requirements. This change in plans produced a good-sized plumbing job.

The carrying of electricity up the road was not even

thought of in the early days, but in the natural order of things it came at last, and this also opened up entirely new possibilities for plumbing.

Times have changed and are continuing to change, and our story testifies to this. Years ago the kitchen sink and the hand pump that went with it, represented about all the possibilities there were, and in most cases that was the end of it except for occasional pump repairs. But now, as we have seen, there is no end to the possibilities if the plumber is alert.

Hunting a Disappearing Water Line

(Continued from Page 39)

"Does it flare up quickly?"

"No, it burns slowly and holds the heat a long time."

"The coal we have here burns in a flash, doesn't it?" I said.

"I'll say it does, but I still don't see what you're driving at," Mr. Warner remarked.

"Then let me draw some sketches on this wall. I can't do much explaining without drawing a few pictures. This diagram which I will draw will represent the installation in this building we are in now, but instead of using a cast iron boiler and steel pipe we will draw a system made up of a long glass bottle to represent the boiler. We will use glass tubing instead of pipe, with a throttle valve in the upper tube. We'll open this throttle only 10 per cent of the full opening. The resistance or pressure loss through this throttle valve will represent the pressure loss in a heating system due to the rapid condensing of the steam when it first strikes the colder piping and radiation.

"The length of the steam supply pipe in the building where we are now is about 330 ft. from the boiler to the end of the steam drip line. Just to keep the same proportions, let us say that the glass tubing in our new system is 330 in. long.

"We will use an air pump connected to the upper half of the glass bottle to raise and lower the air pressure in the glass system just like the fire changes the steam pressure in a real heating system.

"Now let us presume that the glass system is half filled with water (see A, Fig. 2) and the plug in the top of the bottle is fastened tightly in place. Due to the fact that the air pressure is the same throughout the entire system, the water line in the bottle and in the glass tube will both be on the same level. These are the positions that the water lines will assume in an actual heating system when all the radiators are shut off or when the system is cold. Then the pressure will be almost the same at all points in the mains.

"Suppose then that we push down on the air pump and rapidly increase the air pressure in the upper part of the bottle to 5 lb. per sq. in. (see B, Fig. 2). The pressure at the end of the drip line will remain at 0, because a certain amount of time is required for the increased air pressure to reach the end of the line, due to the long length of glass tubing and the throttle valve. In an actual system the air vent which is connected to the dry return is wide open until the steam closes it. This is another reason why the pressure at the end of

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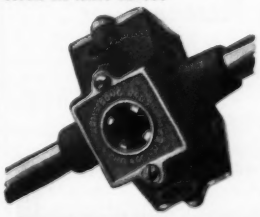

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the main does not increase quickly. On the other hand, the increased pressure in the bottle will be passed on to the water in the glass tubing immediately, with the result that the water will flow out of the bottle quickly and will back up into the tubing until the head of water just balances the pressure drop through the tubing and the throttle valve.

"If the pressure on the right side of the throttle valve is 3 lb. per sq. in. when the water reaches this point, then the water line in the tubing will be just about 54 in. above the water line in the bottle. Then, as the pressure gradually equalizes through the tubing, the water line will drop and the water will flow back to the bottle."

"Now I see what happens in this heating system," Mr. Warner said. "The steam pressure is built up very fast because of the good draft and the flash burning coal. Then because of the long steam piping and the large pressure drop due to the steam condensing as soon as it strikes the colder piping and radiators, the pressure in the end of the steam main is much less than it is in the boiler, so the water backs up into the steam mains. Then when the steam pressures are equalized the water flows back to the boiler. That is right, isn't it?"

"Yes," I replied, "that is just right."

"If that's the case," he said, "why doesn't the same thing happen on other jobs in which wet return check valves are not used?"

"I'll answer that question by drawing another glass bottle and tubing system to represent these other jobs. If I remember correctly, the steam mains on these jobs are about 35 ft. long, so let us say the glass tubes are 35 in. long. (See A, Fig. 3.) This will show a steam and a throttle valve, just as the other one did. On these jobs a slow burning coal is used, so we will slowly increase the air pressure in our model system to 5 lb. per sq. in. by means of the air pump. Since the pressure is increased slowly, the air pressure at the end of the glass tube is only about ½ lb. less than the air pressure in the bottle. For example, when the air pressure in the bottle is 5 lb. per sq. in., the pressure at the end of the tubing will be 4½ lb. per sq. in. (See B, Fig. 3.) Naturally, a small amount of water will back out of the bottle in order to raise the water level in the tubing 13½ in. to balance this ½ lb. per sq. in. difference in pressure. However, this slight amount of water does not affect the boiler water line enough to make any difference and no trouble results."

"I see. In other words we have trouble here and not in the other jobs because of the flash coal which builds up the steam pressure quickly, and the long steam mains which cause a large pressure drop."

"Yes, that's right."

"Then we won't have trouble here if we fire up slowly, will we?"

"No," I answered, "probably not, Mr. Warner, but you'll have to fire up very slowly. However, if you should change janitors, or if someone should forget and fire up quickly, the boiler might be badly damaged. The risk is too great, I think."

"I guess you're right. Will we have trouble on the smaller jobs too if they should try some of this flash coal?"

"That's hard to say, but there is a good chance that

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you might have trouble, so I believe that they should be changed, too."

"What is the best way to fix this?"

"By installing a check valve in the wet return."

"How will that help?"

"To answer your question, I'll draw another picture. Suppose a check valve is used in the wet return. (See C, Fig. 2.) Then, when the pressure in the bottle is quickly increased to 5 lb. per sq. in., the pressure at the end of the main remains zero for a short time due to the pressure drop in the tubing and the throttle valve. However, the water can not back out of the bottle because the check valve won't permit it to. In this way the water line of the bottle does not drop suddenly, as it does when the check is not used."

"What if the check valve leaks?"

"If it leaks very badly trouble may result, but if it leaks only a little, the water will leave the boiler so slowly that before enough leaves to cause any trouble, the pressures are equalized throughout the piping system and the flow stops."

Rating Sweeper Capacity for Vacuum Cleaner Piping Systems

IT MAY be of interest to explain briefly the ratings which are given on central vacuum cleaning systems. These equipments are rated by what is known as *sweeper capacity*. In other words, they are designed to operate one or more cleaning implements simultaneously. In figuring the motor load for any given installation, 2½ h.p. are allowed for each sweeper of capacity that the plant has. Accordingly, therefore, a four-sweeper installation requires a 10 h.p. motor to operate or drive the vacuum producer.

Before installing a system in any building it should be first determined how many operators would be necessary to clean the entire structure in the time which will be allotted for this purpose. On the basis that a given operator can clean 3,000 sq. ft. per hr. one should first determine the total number of cleaning hours which will be available each day. Then by dividing the total number of sq. ft. area in the entire building by the space each operator should clean in this time, the answer will indicate the number of sweepers of capacity that the vacuum plant should have.

For example, consider a building of 500,000 sq. ft. floor area, with seven hours available each night for vacuum cleaning. One operator, if cleaning all of the time, will cover 21,000 sq. ft. Thus, the vacuum system should have sufficient capacity to permit twenty-four operators working simultaneously. This does not mean that twenty-four employes will keep this particular building in first class condition, since there is other incidental work aside from regular cleaning. The above figures, therefore, should be used merely in estimating the capacity of the vacuum producer to be installed. To determine the number of employes actually required in this building, 1,400 sq. ft. per hr., which includes vacuum cleaning and incidental work, should be used. Thus it is found that a total of about fifty-one employes would be needed to maintain the entire building doing all work, such as dusting and mopping as well as the

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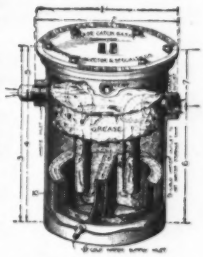

Fig. No. 150 and larger sizes (Patented and Patents Pending)

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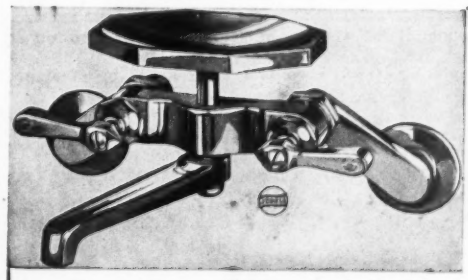

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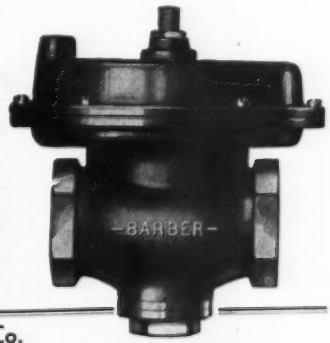

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vacuum cleaning. The reason that a twenty-four sweeper vacuum plant is sufficient to accommodate fifty-one operators is due to the fact that a load factor enters here, with the result that probably never more than half of the workers are vacuum cleaning at any one time. Thus a twenty-four sweeper plant takes care of the installation very nicely, although practically twice this number of employes are needed for the cleaning of the entire building.

It has developed in a number of buildings where the vacuum cleaning system has been installed that it is advantageous to have the operators work in pairs. Thus, for instance, two women are assigned a certain amount of floor space which is under their entire care. While one woman is vacuum cleaning this area, the other woman is occupied emptying waste-paper baskets, cleaning cuspidors, dusting and doing the other incidental work which is necessary.

Heating in Residences and Small Structures

(Continued from Page 57)

Glass—15 sq. ft. x 0.321	4.81	(See Note B)
Total	11.03	(See Note C)
Addition for E. Exposure 10%	1.10	(See Note D)
Total for East Wall	12.13	(See Note E)
S. Wall—87 sq. ft. x 0.083	7.22	(See Note F)
Glass—30 sq. ft. x 0.321	9.63	(See Note G)
Total	16.85	
Addition for S. Exposure	00.00	(See Note H)
Total for South Wall	16.85	(See Note I)
Ceiling—117 sq. ft. x 0.083	9.71	(See Note J)
Floor—117 sq. ft. x 0.063	7.37	(See Note K)
2 A. C.—1053 x 2 x 0.0053	11.16	(See Note L)
Total	28.24	(See Note M)

Summary

E. Wall	12.13 sq. ft.
S. Wall	16.85
Fl., Clg., A. C.	28.24
Total for room	57.22 sq. ft. steam radiation
Adding 60% for hot water	34.33 sq. ft.
Total hot water	91.55 sq. ft. surface

Note A—Amount of steam radiation necessary to offset net E. Wall loss.

Note B—Amount of steam radiation necessary to offset E. Wall Glass.

Note C—Amount of steam radiation necessary to offset E. Wall and Glass.

Note D—Amount of steam radiation necessary to offset E. Exposure.

Note E—Amount of steam radiation necessary to offset Entire E. side loss.

Note F—Amount of steam radiation necessary to offset net S. Wall loss.

Note G—Amount of steam radiation necessary to offset S. Wall Glass.

Note H—Amount of steam radiation necessary to offset S. Wall and Glass.

Note I—Amount of steam radiation necessary to offset Entire S. side loss.

Note J—Amount of steam radiation necessary to offset cold ceiling.

Note K—Amount of steam radiation necessary to offset cold floor.

Note L—Amount of steam radiation necessary to offset infiltration.

Note M—Amount of steam radiation necessary to offset ceiling, floor and infiltration.

It will be noted that the result obtained by this method checks accurately with the result of 91½ sq. ft., developed for the same room by the Btu. method. If desired the decimal factors used may be made to suit hot water radiation right from the start, in which case it would be unnecessary to add the 60 per cent at the end. In doing this the heat loss per square foot of surface would be divided by 150—the hot water radiator efficiency—instead of by 240, the steam radiator efficiency. This would change the decimal factors to

0.133	for wall
0.513	for glass
0.133	for ceiling
0.10	for floor
0.00846	for cubage

A calculator who does a great deal of heat calculating usually will find that the majority of his work is steam and he soon familiarizes himself with the steam factors. Consequently when a hot water job comes along he prefers to use the steam factors which he has at his finger tips and to add the 60 per cent at the end rather than to change all his decimals to suit the hot water radiator efficiency. The reader, of course, may do just as he prefers and either method will produce equally dependable results.

Comparison of Calculated Radiators with Those Installed

The radiators, as finally installed, were located for various reasons as shown in Fig. 5 with the heater placed in the living room and the expansion tank was located in the space between the hung ceiling and the roof. It will be interesting before closing this chapter to list up the radiation as calculated by the 2-20-200 rule, by the Btu. method and decimal factor method, and to compare them with what was actually installed in the bungalow.

LIST OF RADIATION

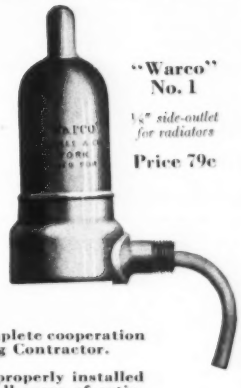
	As Calculated by the 2-20-200 Rule	As Calculated by the Btu. or Decimal Factor Rule	As Installed
Bedroom No. 1	86.03	91½	100
Bedroom No. 2	43.64	52¼	55
Living Room	98.9	116	105
Enclosed Porch	118.9	108	130
Comb. Dining Room and Kitchen	81.8	85¾	85
Bath	28.8	36¼	35
Total	458.07	489¾	510

If a few extra feet are arbitrarily allowed on the enclosed porch on account of the front door, which opens against the west wind, it will be seen that the radiation as actually installed checks remarkably well with that actually required as shown by the Btu. method.* The 2-20-200 rule shows some of its inaccuracies here and, while it might be possible to get by with the radiation as figured by that rule, it would not have been as satisfactory a job as the way it now is.

In the next chapter the matter of pipe sizing will be taken up and the size of the hot water main as installed checked against what really is required

* Some designers add 15 to 25 per cent to radiator surface for radiators set on same level as boiler.

7 facts behind the 7 WARCOS



"Warco" No. 1
½" side-outlet for radiators
Price 79c

1 Together, they meet every Air and Vacuum Valve need.

2 They constitute a standardized line—each with a definite, necessary function to perform.

3 They are correct throughout in design and workmanship—developed by the actual inventor of the volatile liquid air valve principle.

4 They are backed by an organization with forty-one years of experience in this special field—and by an aggresive policy of complete cooperation with Wholesaler and Heating Contractor.

5 They are guaranteed, when properly installed and operated, to give five full years of satisfactory service.

6 They have met the test not only of the severe factory tests under actual steam conditions, but the ACID TEST OF DAILY AVERAGE USE.

7 They are ready for immediate delivery through your nearest Warco Wholesaler. Ask him about the liberal Warco discounts.

W. A. RUSSELL & CO., Grand Central Terminal Bldg., New York
Chicago Boston Detroit Baltimore Denver Minneapolis

"Warco" Automatic Air & Vacuum Valves

WELDCO WATER HEATER
TRADE MARK REG U.S. PAT OFF

Greatest Efficiency Yet Reached!

ENTIRELY new and different design in an efficient, permanent Automatic Hot Water System. Lifetime copper heating element is submerged in vitreous enameled tank. Tests reveal an efficiency never before attained—dependable, continuous supply of clean, hot water assured for the life of the building

NEW FOLDER FREE
Write today for illustrated literature and complete details which point the way to profits for you.

The Youngstown Welding & Engineering Co.
3600 Oakwood Ave. YOUNGSTOWN, OHIO

What Women Are Doing

It's A Great Life If Your Endurance Is Good!

The story which begins on this page is an interesting biography of the wife of one of the men in the trade who, as you will find, is doing much to promote her husband's business. This interesting story tells how this clever business woman helps in her husband's office. And another can do exactly the same thing for her husband

"DUE to the present economic situation it has become necessary to reduce our sales force. Your services, therefore, will not be needed after Sept. 1st."

Words to that effect were the gist of a letter received by my husband back in 1921 from the sales manager of a large manufacturing company, for whom he had been working a short time.

Young and inexperienced in the ways of business, and not having had a husband very long, I felt permanently disgraced that he should be let out, however diplomatically. Gone were my visions of his becoming an important executive in that company, and I was furthermore indignant to think that they lacked the foresight to see, as I did, what a valuable man he would have made them.

When he announced his intention of going immediately into the contracting business, I could not imagine how he was going to manage it, on the large capital of $75 that we had at hand, but I was all in favor of it and believed that he would make a go of it somehow, since he was endowed with a certain bull-doggish tenacity that usually got him what he went after.

He at first rented only a desk space in an office where there was a girl to take telephone calls, but that plan did not work out so well, as messages went astray, tools and material began to accumulate, and so after the first month he moved, and that was when I stepped into the picture.

We acquired a tiny shop, near the center of town, not much on looks or long on neighborhood, but very cheap as to rent, and that was the main consideration. I took on the job of office girl, bookkeeper, show room salesman, advertising manager, and janitress. My family feared for my very life when I was alone in that office, for many of the passersby were dope peddlers, thugs, and other undesirables. I did not know what fear was, however, and they never bothered me, though I spent three years there picking up many an extra nickel from the neighbors for connecting up a gas stove, running a few feet of water pipe, or some other little odd job of the kind.

Connecting gas stoves, by the way, was one of the main sources of bread and butter during those early days, in fact we made a specialty of it, advertising this service in the "want ad" columns of the newspaper, and calling all the movers each day for a list of people moving whom we could follow for this business. This activity rather led us into a side line, the second hand stove business, too, for often we would get in an old stove for a mere nothing, which I would wash and polish up during my spare moments, advertise, and sell for a substantial sum.

(To be continued)

Milwaukee Auxiliary Takes Active Part in Civic Affairs

Forty ladies were in attendance at the second fall meeting of the Ladies' Auxiliary of the Milwaukee Master Plumbers' Association, held October 5 at the Elks club, Milwaukee, Wis. Greetings were extended to the local members of the auxiliary who are national officers, namely, Mrs. F. C. Kuetemeyer, who is third vice-president of the national organization, and Mrs. Rose Friend, national historian.

It was announced at the meeting that an effort will be made to collect money this year to be used for welfare work. A social card party is scheduled to be held at the Elks club on November 20 to raise money for this purpose, and other card parties and social events of various kinds are being planned. A trip will also be taken during November through Wisconsin Memorial park.

On October 8 the ladies were taken on a tour through the new Novelty dye works plant at Milwaukee, at which time each lady was presented with a pair of candlesticks as a souvenir.

"It must not be supposed," declared Mrs. C. Blackford, corresponding secretary for the Milwaukee auxiliary, "that these constant entertainments do not bring money into the coffers of the auxiliary treasury. We are constantly adding to our treasury and this winter we intend to do some welfare work in the city. In many cases, plants of the city pay each lady who attends a tour and this money is all put into the auxiliary treasury. If the entertainment is furnished free by certain of the plants, we charge the ladies a certain amount and this money is also put into the treasury.

"The Ladies' Auxiliary of the Milwaukee Master Plumbers' Association is more than a social organization; it is an association which has a definite place in the civic life of Milwaukee."

Amarillo, Texas, Auxiliary Wins Prize in Membership Drive

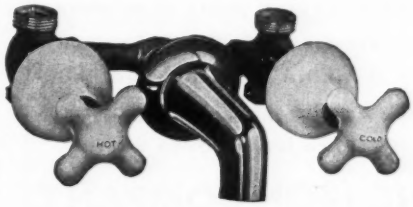
Mrs. W. E. McAndrew of Tampa, Fla., past National auxiliary president, writes us again about the recent membership drive of the National auxiliary held prior to the National convention in June. It has already been reported that the Connecticut division won among the state organizations. However, instead of Denver, Colo., winning among cities where no state organization exists, Mrs. McAndrew now reports that the Amarillo, Tex., auxiliary is the winner. Mrs. G. L. Smith is president of this auxiliary, and aside from its regular auxiliary duties, the members are doing a great deal of charity work. This membership prize probably will be used to continue this charity work.

North Hudson Women Hold Picnic

The North Hudson, N. J., auxiliary recently held a picnic at Spring Valley. The members were the guests of Mrs. Edward Bender at her summer home. The trip

Group of ladies attending the convention of the Louisiana-Mississippi Association of Plumbing and Heating Dealers, held recently at Jackson, Miss.

WISECO **Straight Eight** TUB FILLER



Extra Heavy Red Metal Valves

Cast Brass Assembly

8" Centers

Ask your Jobber for No. 8211

A Quality Fixture at a Competitive Price

J. B. WISE, Inc., Watertown, N. Y.

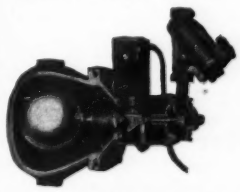
Stop this!

Eliminate those unexpected "shots" of hot and cold water in shower baths. Stop the time wasted in trying to get water at the right temperature. Install Powers Mixers. Write for 20-page book.

THE POWERS REGULATOR CO.
2716 Greenview Ave., Chicago
Offices in 37 Cities

with The
POWERS
SHOWER MIXER

Don't tell 'em to forget « « « «
and then ask 'em to remember!



When a man pays for automatic heat, he buys the right to forget his boiler room. He can do this if his oil-burner, stoker or gas burner is protected by a McDonnell No. 30 Series Safety Feeder with No. 31 Emergency Switch. There is a size for every type and size of boiler—and a good profit in every job.

McDONNELL & MILLER
400 N. MICHIGAN AVENUE, CHICAGO
Eastern Office: Grand Central Terminal, New York, N. Y.

J&L PIPE

J&L
STEEL PIPE
BLACK and GALVANIZED

Full Standard Weight — Extra Strong
Double Extra Strong

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AMERICAN IRON AND STEEL WORKS
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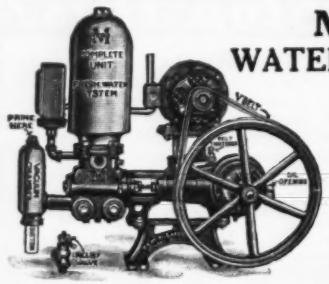
When your customer asks for piping that gives long years of uninterrupted service, OF COURSE you'll install Genuine Reading Puddled Iron Pipe — the pipe that generations of service have proved will last.

READING IRON COMPANY

General Offices: 401 N. Broad Street, Phila., Penna.

Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Iron Pipe

MYERS WATER SYSTEMS



Quality, service, price—determining factors in business success. For those who sell and install pumps and water systems, the Myers Line satisfactorily meets these conditions. Styles and sizes in a wide capacity range offer unusual sales advantages for progressive dealers. Whatever your local water conditions may be, write or wire for information and catalog.

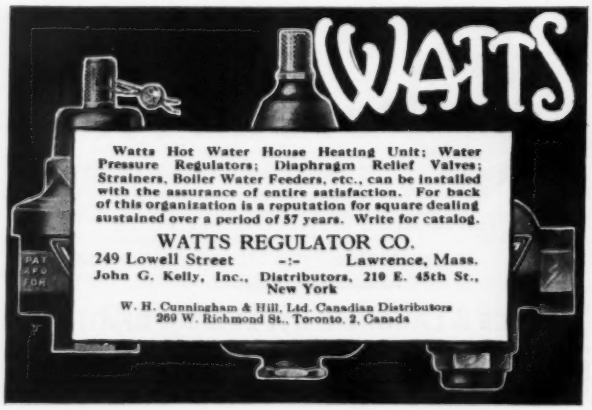
The F. E. MYERS & BRO. CO., Ashland, Ohio

STASCO EMPIRE SEAMLESS SEATS

are guaranteed for 5 years not to crack, chip, craze, peel or discolor and to give absolute satisfaction.

STANDARD TANK & SEAT CO.

CAMDEN, N. J.


WATTS
Watts Hot Water House Heating Unit; Water Pressure Regulators; Diaphragm Relief Valves; Strainers, Boiler Water Feeders, etc., can be installed with the assurance of entire satisfaction. For back of this organization is a reputation for square dealing sustained over a period of 57 years. Write for catalog.
WATTS REGULATOR CO.
249 Lowell Street -:- Lawrence, Mass.
John G. Kelly, Inc., Distributors, 210 E. 45th St., New York
W. H. Cunningham & Hill, Ltd. Canadian Distributors
260 W. Richmond St., Toronto, 2, Canada

was made by motor, arriving in time for luncheon. Golf, bridge and pinochle were played in the afternoon. Mrs. C. Zimmerman and Mrs. A. Viehorg had low score in golf; Mrs. F. Cotte and Mrs. H. Bunker were winners in bridge and Mrs. N. Markle won honors in pinochle.

Mrs. L. Myer took motion pictures of the picnickers and these will be shown at the club rooms sometime during the winter. The party completed the day with a spaghetti dinner, served by Mrs. N. Triani.

The first meeting this fall was held Tuesday evening, September 22, at the club rooms, 501 Palisade avenue, West New York.

Trenton Auxiliary Holds First Meeting

The Trenton, N. J., auxiliary held its first meeting of the season at the home of Mrs. A. Bruno, president, on September 23. At this meeting plans were made to entertain the state board at a dinner in the near future. Twelve auxiliary members were present. Refreshments were served.

Mansfield, Ohio, Auxiliary Meets at Home of Mrs. Frye

On September 24, the Mansfield, Ohio, Women's Auxiliary held its regular meeting at the home of Mrs. Homer Frye, on Marion avenue. The members of the auxiliary worked on two comforters which they are making for needy families. Luncheon was served later. Mrs. E. F. Malone will entertain the last Thursday in October.

A weiner roast was held on September 10th by the auxiliary to which their families were invited. This was held at the new home of Mr. and Mrs. Frank Frietchen and served also as a house warming. They were presented with a lovely gift. The committee in charge of this weiner and corn roast consisted of Mrs. C. W. Ricker, Mrs. Herman Hoffman, Mrs. Homer Frye and Mrs. W. E. Antrican.

Mrs. Kiser Entertains Denver Women

On September 9, the Denver, Colo., Women's auxiliary met at the home of Mrs. V. A. Kiser, president. A delicious luncheon was served by the hostess at one o'clock. The meeting was called to order and fourteen members responded to the roll call, with two visitors.

Honors at cards went to Mrs. J. P. Brickey and Mrs. John Hensler. Mrs. Bordeau won the house prize. Mrs. J. J. Laverty planned to entertain on September 23. We learn that Mrs. John Hensler had the misfortune of breaking her arm at the master plumbers picnic.

Minneapolis Auxiliary Holds First Business Meeting

The first business meeting of the Women's Auxiliary to the Minneapolis Retail Plumbers Association was held at the association's headquarters on September 1. It was voted that a card party and luncheon be given at Zinsmaster's Bakery at one o'clock on October 9, for the purpose of raising money. The following committee was appointed: Mesdames H. W. Strader, Oscar Johnson, Fred Bartell, A. N. Wintheiser, A. G. Nelson and Fred Stiller. Mesdames H. W. Strader and Fred Stiller were elected delegates to attend the State Federation of Women's Club convention, which was held at the Lowrey hotel, St. Paul, September 15 to 18.

The monthly social meeting, at which thirty-two were present, was held at the Curtis hotel on September 15. Following luncheon, bridge and five hundred were enjoyed. The committee in charge was: Mesdames Arnold Bing, P. J. Gleason, H. M. Hanson, Ernest Buckett and Edmund Copperud.

New Trade Literature

New Catalog on Torches and Furnaces

Otto Bernz Co., Inc., of Newark, N. J., has just issued a new edition of its Catalog No. 50 which illustrates and describes the revised line of torches furnaces of the company's manufacture. The catalog also covers the company's line of melting ladles, metal pots, chisels, caulking irons, gasket irons, wrenches, etc. The pages are bound in a heavy paper cover and are of the loose-leaf type.

Folder Announcing New Stokers

Combustioneer, Inc., of Goshen, Ind., has just issued a folder illustrating and describing in detail two new automatic stokers, one for bituminous coal and one for anthracite burners. These stokers have been designed for domestic use and can be used in boilers as small as 12½ in. inside fire box diameter.

Swinging Faucet Leaflets

The Haydenville Co. of Haydenville, Mass., has published neat leaflets illustrating and describing its new swing nozzle double sink faucet with metal soap dish, with nickel plate or chromium finish. These leaflets bear the title: "If You Take Pride in Your Kitchen," and they are prepared so that the name of the dealer can be included.

Gas Welding and Cutting Equipment

Torchweld Equipment Co. of Chicago has issued its Catalog 31, consisting of 32 pages, 3½x6¼ in. and containing illustrations and descriptions of its welding and cutting torches, oxygen regulators with automatic safety relief valves, gas pressure regulators, cutting torch tips, welding torch tips and gas mixers, cylinder connections and adapters, torch connections, needle valves, steel trucks, pressure gauges, flame lighters, welding goggles and spectacles, welding flux, etc.

Folder About Brass Pipe

The American Brass Co. of Waterbury, Conn., has just issued an attractive folder about its brass pipe for plumbing jobs, entitled "It has to be good to carry the name: Anaconda." The folder tells about brass pipe for use in localities where the water is normally corrosive, about red brass pipe where the water is highly corrosive, and about deoxidized copper water tubes for underground service lines with compression fittings, and for connecting oil burners to storage tanks as well as for industrial and residential plumbing.

Standards for Staple Seats for Water Closet Bowls

The U. S. Department of Commerce, Bureau of Standards, Washington, D. C., has just published a 20-page booklet, containing the commercial standards for staple seats for water closet bowls. These standards became effective for new production and clearance of existing stocks on October 1, 1931. The booklet also brings a list of the associations and firms which have accepted these standards of practice in the production, distribution or consumption of these lines. The price of the booklet is 5 cts. and it is for sale by the Superintendent of Documents, Washington, D. C.

Folder of York Oil Burner Co., Inc.

York Oil Burner Co., Inc., of York, Pa., has just published a four-page folder, 8½ x 11 in., containing the sales record of its oil burner, the company's history, business policy and manufacturing methods. The folder is printed in two colors and is well illustrated.

Fuel Oil Gauges and Pumps

An envelope stuffer has just been distributed by Teesdale Mfg. Co., Grand Rapids, Mich., which tells about the fuel gauges of the company's manufacture, designed for installation on oil storage tanks. Two line drawings give installation details. The company has also distributed a pamphlet describing its new automatic oil pump for oil burners. This pamphlet contains complete information on the pump, as well as on the check valve produced by the company.

Milwaukee Valve Co.'s Catalog

Milwaukee Valve Co. of Milwaukee, Wis., has just sent out its new catalog of radiator valves, bronze globe and angle valves, compression stops and wastes, bronze gate valves for steam, water, gas, oil or air; bronze check valves for steam, water, gas or oil; bronze needle point valves, diaphragm relief valves, brass unions, automatic air valves, thermostatic traps, packless radiator valves, boiler return traps, drip and blast traps, water feeders, air eliminators or float vents, damper regulators, quick vents compound gauges, sediment strainers and air line valves.

New Catalog of General Electric Co.

General Electric Company, Schenectady, N. Y., has just issued a new catalog No. GEA-606C, which furnishes information on representative lines of industrial control manufactured by the company. It also includes instructive matter on the care and operation of control devices; wiring diagrams of standard controllers, push buttons, and other accessories; reference tables; list of publications, and other useful information. The new catalog supersedes No. GEA-606B. It contains nearly 200 pages of material and is bound in a heavy paper cover. The

Some of those who attended the recent outing of the Heating and Piping Contractors Boston Association, held at the United Shoe Machinery Golf Club, at Beverley, Mass.

No. 2 Vacuum Valve

MODERN HEATING EQUIPMENT

for all types of Buildings

HOFFMAN VALVES
HOFFMAN CONTROLLED HEAT
HOFFMAN-ECONOMY PUMPS

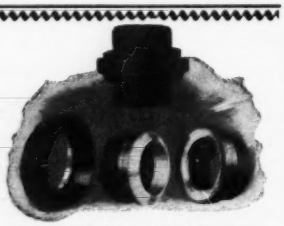
Write for Catalog

HOFFMAN SPECIALTY CO., INC.
DEPT. RX-74 WATERBURY, CONN.

Dependability

Dependability is a much abused word in many instances, but you will not find this to be the case in DART UNIONS.

DART UNIONS are made of heavy high-grade malleable iron castings, tested through every step in manufacture, assuring you a union that will last the life of the installation, and the TWO BRONZE SEATS give *double protection* to the joint.



Each day finds more and more contractors specifying DART UNIONS because of their all around dependability.

E. M. DART MFG. CO.
Providence, R. I., U. S. A.
Sales Agents:
The Fairbanks Co., New York and all branches.
Canada Factory:
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WALWORTH

Walworth Company, General Sales Offices:
60 East 42nd St., New York

Plants at Boston, Mass., Kewanee, Ill.;
Greensburg, Pa., and Attalla, Ala.

Distributors in Principal Cities in the World

Walworth Company Limited, 660 St. Catherine St., West, Montreal, P. Q.

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VALVES, FITTINGS AND TOOLS

MOORE HANGERS

"We've installed Moore Hangers on the last six remodeling jobs we've done and from the way customers talk about the satisfaction, cleanliness and convenience Moores provide, we're going to keep right on installing them."

Order Moores from your jobber today. They're available in all sizes and to fit any type of radiator.

CARTY & MOORE ENG. COMPANY, INC.
611 W. Larned St.
DETROIT, MICH.

LOOK FOR OUR CATALOG IN SWEET'S

company has also distributed a number of pieces of literature describing various types of electric motors of its manufacture; also certain types of its centrifugal air compressors and solenoid-operated valves. In addition, the company has prepared for distribution an envelope stuffer describing its line of soldering irons.

The Borden Company's New Catalog

The Borden Company of Warren, Ohio, has just issued its new condensed Catalog No. 32, consisting of 8 pages and cover, 8½x11 in. This catalog is boiled down to a minimum making it very easy for any one to locate exactly what he wants without turning over a lot of pages. It bears the title "The Beaver Line of Pipe Tools" and lists and illustrates the company's pipe machines, stocks and dies, power drives, pipe cutters and repair parts.

Domestic Heat Insulation Sales Campaign

A sales plan for more and better home insulation has just been prepared and published by the Keasbey & Mattison Co. of Ambler, Pa., in the form of a 16-page booklet, size 8½x11 in., with several additions, such as heating and plumbing report cards, order blanks, money-comfort folders and catalog of insulation materials, all for the purpose of helping the heating dealer to make an extra profit on his heating jobs, as well as helping the house owner to reduce his fuel bill, secure more comfort upstairs and a neater cellar. Included also in the sales plan are several valuable pointers on how to find prospects.

New Contractors and Incorporations

Brooklyn, N. Y.—The Fulton Plumbing and Heating Corp. has been chartered, with a capital of $20,000, to establish and operate a plumbing and heating engineering contracting business. The new concern is represented by M. B. Schiparo, 11 West Forty-second street, New York City.

New York City—William J. Johnston and associates, have organized and incorporated the William J. Johnston Plumbing and Heating Co., with a capital of $2,000, to establish and operate a plumbing and heating engineering and contracting business. The new firm is represented by J. L. O'Connell, 25 West Forty-third street.

Portland, Ore.—Thomas E. Hulme has engaged in the plumbing and heating contracting business at 108 14th street.

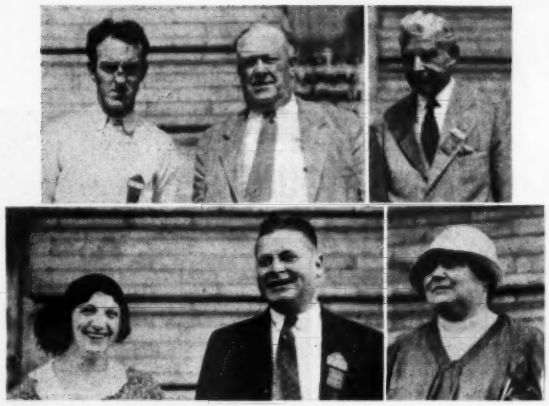
Van Nuys, Calif.—Dessert Brothers have engaged in the plumbing and heating business at 6016 Hazeltine avenue, the firm being composed of J. F. Dessert, Jr., of 129 West Harriet street, Los Angeles, and L. E. Dessert, 1107 La Boice Drive, Glendale, Calif.

White Plains, N. Y.—The Merit Heating Corporation has been chartered, with a capital of $20,000, to establish and operate a heating engineering and contracting business. William Eadt, local attorney, represents the new concern.

Red Bank, N. J.—The firm of Millstrom and Hoffman, Inc., has been chartered, with a capital of $25,000, to establish and operate a plumbing engineering and contracting business. The new concern is represented by Harry Klatsky, local attorney.

Valley City, N. D.—A. S. Thompson has opened up a plumbing and heating business. Mr. Thompson was formerly with the Central Heating & Plumbing Company of Valley City.

Flushing, N. Y.—The Siegmann Plumbing and Heating



Top row, left to right: Edward J. Manahan and Thomas J. Manahan, elected seventh vice president, both of St. Louis, Mo.; and Thomas G. English, Pittsburgh, Pa. Bottom row: Mrs. and Mr. Joseph E. Heffron, Washington, D. C.; and Mrs. Thomas M. Landers, of Richmond, chairman, ladies' committee. Photos taken at the 26th annual convention of the American Society of Sanitary Engineering, held recently at Richmond, Va.

Corporation has been chartered, with a capital of $10,000, to establish and operate a plumbing and heating engineering and contracting business. The new firm is represented by J. F. Poey, local attorney.

Glendale, Calif.—E. Coker & Co., composed of Lester A. Maiers and others, has engaged in the general plumbing and heating business at 215 S. Brand boulevard.

Los Angeles, Calif.—The Mission Plumbing Co., composed of Manuel and John Demattos, has engaged in business at 1115 S. Grandview avenue.

St. Charles, Mo.—Sebacher and Poser have engaged in the plumbing and heating business at 716 North Sixth street, in this city.

Estherville, Ia.—The Canfield Plumbing Company has opened a plumbing and heating business here.

Milwaukee, Wis.—George F. Blackford, Inc., has filed articles of incorporation with the Wisconsin secretary of state, to deal in all kinds of plumbing and heating appliances, etc. Incorporators are George F. Blackford, T. C. Nolf and H. R. Neubauer. The firm is incorporated with 100 shares at $20 each.

Milwaukee, Wis.—Federal Plumbing Supply Co. has been incorporated with the Wisconsin secretary of state to operate a general plumbing, heating and drain business. Incorporators are Ben Parchefsky, M. Parchefsky and T. Parchefsky. The firm is incorporated with 300 shares at $50 each.

Business Changes by Contractors

Brooklyn, N. Y.—M. Josephson, plumbing and heating contractor of this city, has moved his office and shop from 4706 Church avenue to 4115 Church avenue.

San Francisco, Calif.—Edward Navarro has moved his plumbing and heating business from 1704 Washington street to 2948 Gough street.

Newark, N. J.—The National Home Plumbing Corporation has been chartered, with a capital of 2,500 shares of no par common stock, to take over and continue the operation of a concern by the same name here, specializing in plumbing engineering and contracting.

LIQUID SOAP FIXTURE

Latest design push-in type. Pressing of button delivers measured quantity of soap. At no position of button can soap run in steady stream. Nickel-Plated or Chromium finish. Send for catalog.

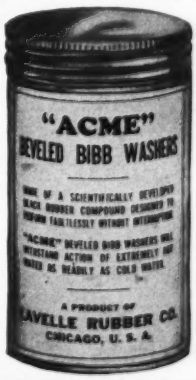
Imperial Brass Mfg. Co.
1231 West Harrison Street
Chicago, Illinois

LEADING CORPORATIONS—distinguished for the certainty with which they buy the most modern equipment and secure the most satisfactory service at lowest final cost—are installing Heggie-Simplex Electric Welded Steel heating boilers in steadily increasing numbers.

HEGGIE-SIMPLEX BOILER COMPANY
JOLIET, ILLINOIS
Representatives in Principal Cities

ACME Handipak

You'll be offered substitutes for the ACME Beveled Bibb Washer but we've taken the necessary precautions to protect you from cheap imitations. We've stamped the name ACME on every genuine Lavelle washer. Insist upon it to get the bibb washer that lasts longest, stops faucet rackets and is packed in the ACME HANDIPAK screw top container.



LAVELLE RUBBER CO.
320 W. Illinois St.
Chicago,
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Now! only $66

Cash, F. O. B. Factory For 210-gallon-per-hour size Complete with motor for 60-cycle or direct current

Profit by this outstanding value in Home Water Systems

AT $66, this complete 210-gallon-per-hour Fairbanks-Morse Home Water System is unmistakably the greatest value ever offered.

It is automatic with all working parts enclosed in a handsome lacquered casing. This tremendous value, made possible by Fairbanks-Morse quantity production and world-wide distribution, will mean extra profits for the dealers that handle them. Write now for complete information before someone else in your territory gets the franchise. Address Dept. I-10.

FAIRBANKS, MORSE & CO., 900 S. Wabash Ave., Chicago

FAIRBANKS - MORSE Home Water Systems

ROBERTSON

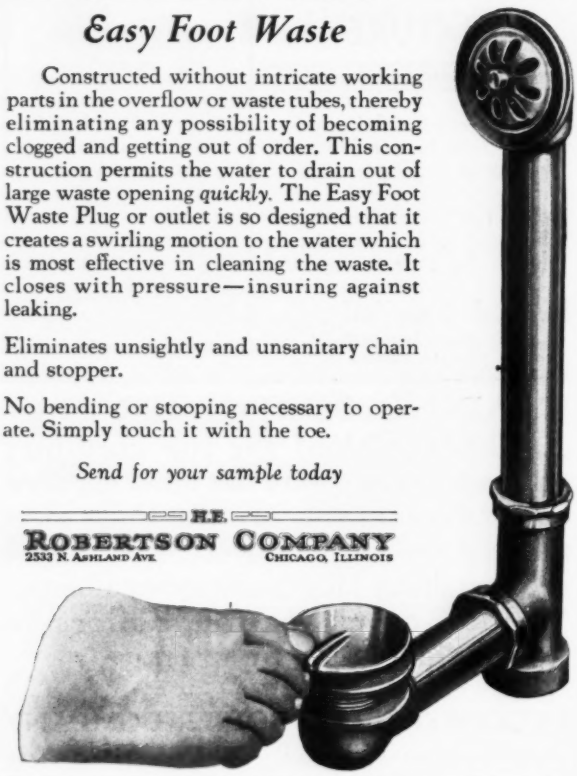
Easy Foot Waste

Constructed without intricate working parts in the overflow or waste tubes, thereby eliminating any possibility of becoming clogged and getting out of order. This construction permits the water to drain out of large waste opening *quickly*. The Easy Foot Waste Plug or outlet is so designed that it creates a swirling motion to the water which is most effective in cleaning the waste. It closes with pressure—insuring against leaking.

Eliminates unsightly and unsanitary chain and stopper.

No bending or stooping necessary to operate. Simply touch it with the toe.

Send for your sample today



H.E. ROBERTSON COMPANY
2533 N. Ashland Ave. Chicago, Illinois

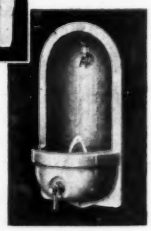
Note the DRINKING MOUND

It is a distinguishing and an exclusive feature. The two-stream projector provides a localized drinking mound, practical, sanitary and convenient to drink from under all conditions.

The HALSEY TAYLOR *two-stream projector*

Sanitation Assured

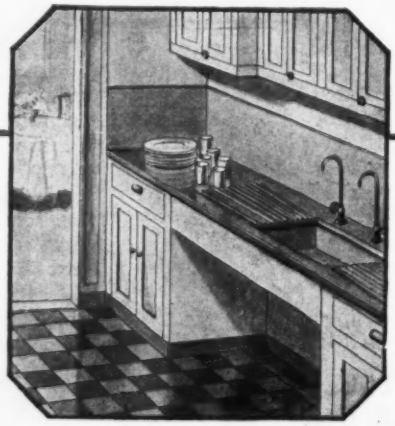
Because Halsey Taylor Drinking Fountains assure maximum sanitation, they are the preferred specifications for schools, hospitals, and for public buildings everywhere. A wide range of practical designs to fit varied needs and expenditures.



Illustrated . . . a popular wall fountain . . . a semi-recess type with glass filler.

The Halsey W. Taylor Co., Warren, O.

HALSEY TAYLOR Drinking Fountains



SINKS *to fit every* PANTRY

Don't overlook any chance to "get in" on pantry renovating jobs.

You can sell an Alberene Stone Sink and get it in whatever size you need.

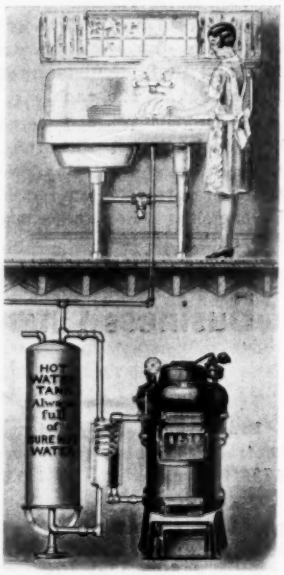
Probably the customer already is using an Alberene Laundry Tray so she will know all about Alberene's cleanliness and durability. Watch out for pantry sink business!

ALBERENE STONE CO.
153 West 23rd Street, New York

SURE HOT

WATER HEATER

THE M. S. Little MANUFACTURING COMPANY



Hot water costs your customers practically nothing with a Sure-Hot. That, plus Sure-Hot efficiency is making business good for plumbers and heating contractors who push Sure-Hot Water Heaters. Made in fourteen sizes from 30 to 650 gallons. Send for folder 56-1 showing NEW designs, capacities, etc.

THE M. S. LITTLE MFG. CO.
HARTFORD ∴ ∴ CONNECTICUT

Large Construction Projects

Even though new construction is at a low ebb compared with recent peak years, the fact remains that new projects are being started every day. Listed below are just a few of the larger building operations, either contemplated or only recently started.

Bellwood, Ill.—The Jefferson Electric Co., Chicago, has awarded the general contract for the construction of a new $550,000 plant to the Austin Co., of Cleveland, Ohio. The plant is being built at 25th avenue and Madison street, in Bellwood.

Webster Groves, Mo.—Construction on the new $100,000 city hall here will start about November 1. Charles L. Thurston is the architect.

Chicago, Ill.—Contracts have just been let and work will start at once on a $475,000 sausage manufacturing plant, at Randolph and Carpenter streets, for the Richter Food Products Co. James Shedden & Co. are the general contractors.

Philadelphia, Pa.—The general contract for the new junior high school to be erected at 59th and Malvern avenue has been awarded to John McShain, on a bid of $767,240. The total cost of the project will be more than one million dollars.

Little Rock, Ark.—Five major building projects are under construction in Arkansas by the United States government and three others are planned to start in the next few weeks. The aggregate cost of these structures will be more than $5,000,000. Included in the list are: postoffice buildings in Little Rock, Brinkley, Stuttgart, North Little Rock and Texarkana; an office building for the U. S. Engineering Corps; an addition to the Army and Navy hospital at Hot Springs; and a building for the Veterans' Bureau at Fort Roots.

Jackson, Miss.—General contracts for a group of buildings for the State Insane hospital here, totaling $632,737 have been awarded. The largest part of the work was awarded to Oden & Glenn, of Hattiesburg.

Miami, Fla.—Ralph Sollitt & Sons Construction Co., Chicago, submitted low bid at $1,032,472 for the new Federal building here.

Springfield, Mo.—An eight-story apartment house is to be erected here at a cost of $300,000. C. A. Dieter Construction Co. are the contractors.

Wheeling, W. Va.—Work will start soon on the $300,000 home for the Wheeling Lodge No. 28, B. P. O. Elks.

Hackensack, N. J.—Frank W. Bogert of this city has been awarded the general contract on the new administration building here, on a bid of $732,596. He also received the contract for foundation work, at $133,000.

Clarksburg, W. Va.—General contract to erect a $700,000 courthouse here for Harrison County has been awarded to Hutter Construction Co., Fond du Lac, Wis., at $456,700.

New Orleans, La.—Sisters of the Blessed Sacrament have awarded general contract at $378,032 to the George J. Glover Co., Inc., New Orleans, to erect a group of three buildings on Palmetto street.

Jersey City, N. J.—C. J. Smith Construction Co., Trenton, has submitted low bid of $579,300 for the contract to build the proposed Jersey City Armory.

Atlanta, Ga.—Potter & Shackelford, of Greenville, S. C., have been awarded the general contract for a dormitory and law building for the University of Georgia. The total cost of the two projects will be about $234,000.

New York City.—General contract for the erection of the Bronx County court and office building has been awarded to the William Kennedy Construction Co., of Brooklyn, on a bid of $4,747,397. Work will start immediately.

Brookline, Mass.—Kilham, Hopkins & Greeley, 9 Park street, Boston, have been retained to prepare plans for an addition to the high school on Greenough street, to cost about $400,000.

Providence, R. I.—Bids will be asked during October for a new elementary school to be erected at Paul and Windmill streets at an approximate cost of $400,000.

Willimantic, Conn.—The State of Connecticut is considering plans for the erection of a soldiers' home on West Main street. Buildings will be erected to cost $1,500,000.

Minneapolis, Minn.—Hull-Berg, Inc., Wm. Berg, 4411 Lyndale avenue South, and Allen B. Hull, 4912 Oakland avenue, are having plans made and will soon start construction of 16 duplex dwellings at Irving and James avenues South at West Thirty-sixth street, to cost from $15,000 to $20,000 each. Total cost of project is over $300,000 and is the largest home building project in Minneapolis for several years.

St. Paul, Minn.—Plans are nearing completion and bids will soon be taken by the Minnesota State Commission of Administration and Finance, for the construction of a seven-story state office building at Wabasha street and Park avenue, to cost $1,000,000. C. H. Johnston, 360 Robert street, St. Paul, is the architect.

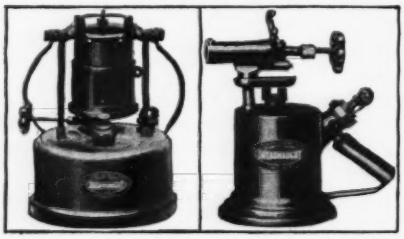
La Crosse, Wis.—Jacob Gruesner, apartment house builder, 4801 Lyndale avenue South, Minneapolis, Minn., will start construction in November on a six-story apartment house in La Crosse, to cost $300,000.

North Platte, Neb.—North Platte Plumbing & Heating Company, North Platte, with a bid of $16,213, has been awarded the plumbing and heating contract in the new community hospital being built in that city at a cost of $150,000.

Spencer, Iowa—One of the largest building programs ever launched in this territory is now under way in Spencer to replace buildings destroyed by the $2,000,000 fire on July 2. Some of the buildings now under way are: a $75,000 telephone building for the N. W. Bell Telephone Co.; a $25,000 store for F. W. Woolworth Co.; a $35,000 store for J. A. Redfield; a $30,000 store for Council Oak Grocery; an $18,000 store building for Mrs. Walter Smith; a $75,000 store project for J. A. Cummings Drug Co., Wm. Flindt Clothing Co., and J. C. Rasmussen; an $80,000 bank and store building for the Clay County National Bank and D. E. Cole; a $50,000 theater for Mrs. R. E. Fraser; a $20,000 store for Blaine Asher; a $25,000 store remodelling job for L. C. Burr Co.; a $30,000 store for F. G. Floete and W. H. Thomas; and several others. A $50,000 city hall, a $125,000 postoffice and a $100,000 hospital will be built in the near future.

Brockport, N. Y.—Contracts will be let this fall for the construction of a new Central high school, costing $425,000. Dryer and Dryer of Rochester, are the architects.

A NEW LINE..
of WALL products
at a NEW LOW PRICE



Write for complete information. Ask for our plumbers' circular.

THOUGH lower in price than ever before, each is a newly developed WALL product designed to serve best your most particular needs, without the sacrifice of typical WALL quality features! It will pay you to get in touch with your jobber at once—or for jobbers to get in touch with us.

P. Wall Mfg. Supply Company · Pittsburgh, Pa.

SINCE WALL SUPERIOR PRODUCTS 1866

DREADNAUGHT
"Service with Safety"
BLOW TORCHES . . . FURNACES AND OILERS

RIDGID
The Wrench with the Unbreakable Housing

Replaceable heel jaw . . . full floating hook jaw . . . an adjusting nut that turns easily in open housing . . . instant grip . . . no slipping . . . instant let-go . . . and now, *double* its old strength. See the RIDGID at your Jobbers.

THE RIDGE TOOL COMPANY, Elyria, Ohio

STEEL PARTITIONS
for Toilets, Showers, Dressing Rooms, Urinals
Write for our catalog

THE SANYMETAL PRODUCTS CO., 1723 Urbana Road, Cleveland, Ohio

Sanymetal TOILET PARTITIONS
TRADE MARK U S REG

Pipe —— Lines
Connected by LyT

Now that the school season is in full swing, let's take all the jokes about school boys who say that a flock of camels is a carton, and the mothers who write notes to say that their boys won't be at school today, adding funny postscrips, for granted.

Still, the matter of education is one full of strange twists and turns. For example, there is the story of the couple who studied French because they had adopted a baby and wanted to be able to understand what it said when it started talking.

PET PEEVES

The woman in the flat above
Takes vocal—how we curse—
And every day, in every way
She's getting worse and worse.

JACKSONVILLE TIMES-UNION.

The young man in the flat beneath
Takes lessons on the clarinet,
We've missed him four times up to date,
But we'll get the critter yet.

BUFFALO EVENING NEWS.

The flaming youth in the nearby flat
Plays radio till four,
We've stuffed our ears with cotton bat
And sleep despite the roar.

TYPING TIPS.

As a sign of the times, the editor of "The Insert" says that an ex-stock broker put a sign on his gate reading: "Bill collectors, agents, solicitors. Keep out! BEWARE OF THE WOLF AT THE DOOR!"

And the same editor tells of a man in his neighborhood who fell behind in his alimony payments. So his wife repossessed him.

He's pretty quotable, that editor. He goes on to say that you can always tell the road to success by the folks standing on the side with hammers in their hands.

THE SMART RETORT

He rounded the bend at forty-five. There was a sudden sensation of skidding. The car overturned. They found themselves sitting together, unhurt, alongside the completely demolished car. He put his arm sympathetically around her waist. But she pulled away from him.

"It's all very nice," she murmured. "But wouldn't it have been easier to run out of gas?"

P. G. N., Chicago.

REMEMBER THIS ONE

Customer: "Do you ever play anything by request?"
Delighted Musician: "Certainly, sir!"
Customer: "Then I wonder if you'd mind playing dominoes until I've finished my meal."

"Mueller Record" some time ago reported a newly-married lady as terribly put out by the news item given to her wedding. The papers had said: "Miss Blackfield was married to a well-known collector of antiques."

"My husband is a regular bookworm!" exclaimed one lady to another. And we'll let you guess what the other lady said about her husband.

L Y T.

Bath a Day Movement

177

In 177 cities and towns in the United States copies of "The Story of the Bath" have been distributed and used in the classrooms as a valuable aid to health teaching

FROM Urban R. Zeigler of Pomona, Calif., comes a letter which shows how interest in the Bath a Day material continues to grow. He says: "We are interested in your Bath a Day movement and have had a number of requests from the teachers for copies of 'The Story of the Bath.'"

We here receive requests from teachers daily. They are referred immediately to local or state associations, with the idea that such inquiries represent a splendid opportunity to secure favorable publicity in the community from which the request comes.

In addition, we have the twenty-minute program for the use of master plumbers who are members of Rotary, Kiwanis, Lions, or other service clubs of the kind.

Write for a copy of "The Story of the Bath" and details of school distribution, or concerning the twenty-minute club program.

Little Sentences That Sell

Write one of these BLACK BOARD EPIGRAMS on your window or bulletin board each day. Many master plumbers and heating contractors find them real business getters.

Ambition is a balloon which carries no parachute.

* * *

Lots of animated thinkers are poor talkers.

* * *

Whispered scandal always sounds like a stage whisper.

* * *

Never draw a sight draft on a blind man.

* * *

Don't imagine that the hotel runner runs the hotel.

* * *

The newspapers of the future will be issued tomorrow.

* * *

The world deals good-naturedly with good-natured people.

* * *

When the small boy gets the marble fever he stoops to conquer.

* * *

Some people believe in luck just because they haven't any.

* * *

Those who dodge work are likely to be dodged by the reward.

* * *

When a man is in his cups he is apt to get into family jars.

Fig. 1941 Taber Midget Sump Pump

It works . . . . . when needed most

After heavy rain-storms there is an increased demand for Taber automatic Midget Sump Pumps. Frequently they replace "low price" cellar drainers inadequately motored.

Why wait for a peak load to tell whether the pump will work? Avoid troublesome, profitless service calls . . . install Taber first. The owner of any sump pump expects "Dry Cellar Insurance." He gets it with a Taber Midget.

Bulletin and prices on request. Also see Page 923 Domestic Engineering Catalog.

TABER

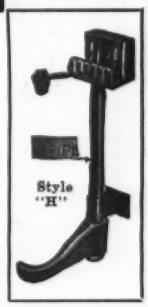
TABER PUMP CO. Est. 1859

290 Elm Street, Buffalo, New York

USE

E-Z RADIATOR HANGER

The Complete Line



Style "H"

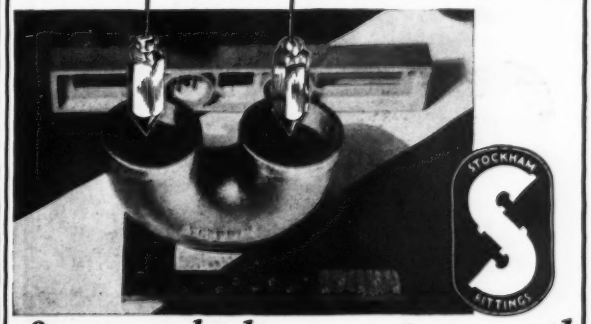
For all types of hung radiators—any and all conditions. Use these proved hangers for better, easier and quicker installations. Fully adjustable both horizontally and vertically. Write for details and prices.

HEALY-RUFF CO.

770 Hampden Ave. St. Paul, Minn.

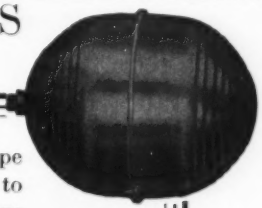
Also Manufacturers of E-Z Inserts and E-Z Lavatory Hangers.

STOCKHAM FITTINGS



for straight lines and strength

WATER MEANS NOTHING



You're familiar with the type of float that actually "goes to pieces" where water conditions are a little below normal. Replace those floats with Toledos. Water means nothing to them. Order Toledos today from your jobber.

THE REICHERT FLOAT & MFG. CO.

2238 Smead Ave. - - Toledo, Ohio

SINCE 1895
Paragon SELF-CLOSING FAUCETS
with renewable seats

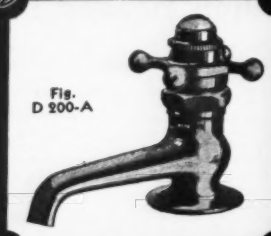
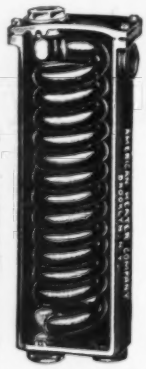


Fig. D 200-A

SMOOTH ball-bearing action. Patented Samson Lock, which makes Paragon handles easiest to adjust. Longer wear—less repair. Choice of handles. Write for folder.

Through your wholesaler

The CENTRAL BRASS Mfg. Co.
PARAGON DIVISION CLEVELAND O.



The American Heater Where the Water Demand Is High—

And where the demand for economy is great. Write the American Heater Co. today for complete information on its water heating equipment.

American Heater Co.
60 Fulton St. Brooklyn, N. Y.

There is no surer way to make a pipe wrench safe and strong than to make it all steel like TRIMO

. . years of experience dictated the design

. . common sense dictated all steel construction

Made by the world's leading makers of pipe tools
TRIMONT MFG. CO., Roxbury (Boston), Mass.

CHALLENGE BRAND

PIPE NIPPLES

With Challenge Brand Nipples made of the finest wrought steel, copper or brass, accurately threaded and cut to perfect lengths, you will save time and trouble on the job. Because they may be obtained in cartons of assorted sizes, they also save space and time in the shop.

Order your supply now.

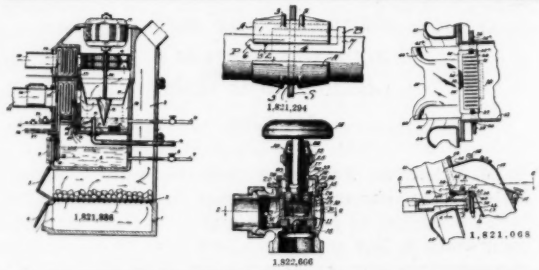
FRICK-REID SUPPLY CORPORATION
Nipple Division
Sandusky and Robinson Sts. N. S. Pittsburgh, Pa.

PATENTS

Heating Department

1,821,886. Heating and Humidification System and Apparatus. Walter L. Fleisher, New York, N. Y., assignor to The Cooling & Air Conditioning Corporation, New York, N. Y., a Corporation of New York.

1,821,294. Pipe Anchor and Clamp. Paul W. Dieter, New York, N. Y.



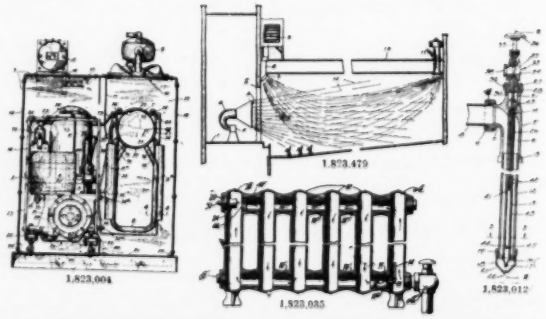
1,822,666. Self-Packing Valve. Charles A. Olson, Geneva, Ill., assignor to Crane Co., Chicago, Ill., a Corporation of Illinois.

1,821,068. Fuel Distributing System for Stokers. Guy M. Myers, Clarendon, Va., assignor to The Standard Stoker Company, Incorporated, a Corporation of Delaware.

1,822,663. Pipe Joint Compound. William Mano, Flushing, N. Y. A pipe joint composition comprising magnesium chloride, magnesium sulphate, lead acetate, glycerine, magnesium oxide, fluorspar, graphite, dextrine, aluminum oxide and water, and serving to seal a joint while adhering thereto insufficiently to prevent forcible separation thereof without damage.

1,823,004. Refrigerating Unit. John R. Replogle, Detroit, Mich., assignor, by mesne assignments, to Kelvinator Corporation, Detroit, Mich., a Corporation of Michigan.

1,823,479. Method and Means for Ventilating Theaters and Distributing Sound. Ray E. Venderbush, Detroit, Mich.

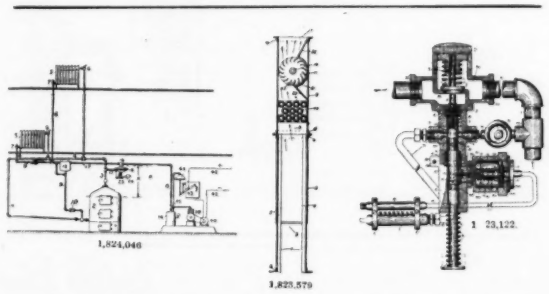


1,823,035. Radiator. Joseph Elger, Chicago, Ill.

1,823,012. Oil Burner. Peter G. Vetter, Berkeley, Calif., assignor to Amelia Vetter, Berkeley, Calif.

1,824,046. Means for Steam Heating. James Logan Fitts, Merchantville, N. J., assignor to Warren Webster & Company, a Corporation of New Jersey.

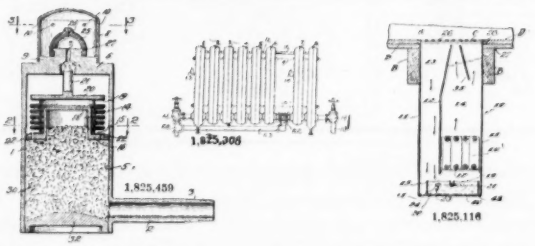
1,823,579. Unit Heater and Ventilator. Edward L. Anderson, Grosse Ile, Mich., assignor to American Blower Corporation, Detroit, Mich., a Corporation of Delaware.



1,823,122. Governor for Gas Burning Heaters. Howard W. Partlow, Utica, N. Y.

1,825,459. Air Relief Valve for Heating Systems. Sven A. Johnson, Brooklyn, N. Y., and Frank C. Risselt, Tenafly, N. J.

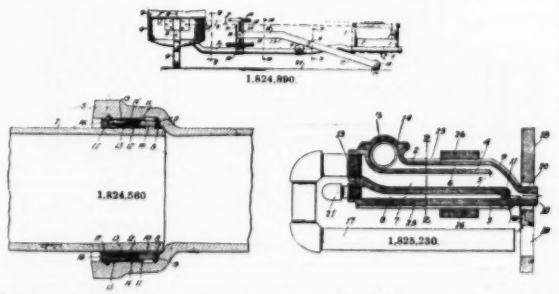
1,825,306. Radiator. John M. Clark, New York, N. Y.



1,825,116. Heating and Humidifying Unit. Eugene H. Holden, Arlington, Mass.

1,824,890. Thermostatically Controlled Oil-Burner. Dewey H. Hill, Macomb, Ill., assignor to Globe American Corporation, Kokomo, Ind., a Corporation of Indiana.

1,824,560. Pipe Joint. James R. McWane, Birmingham, Ala., assignor to McWane Cast Iron Pipe Company, Birmingham, Ala., a Corporation of Alabama.



1,825,230. Oil Burner. Joseph J. Haskin, Stockton, Calif.

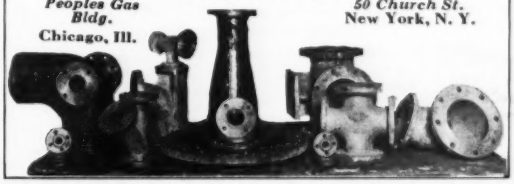
Bell and Spigot Pipe and Fittings from 4" to 48."
Cast Iron Flanged Pipe from 3" to 84".
Cast Iron Flanged Fittings from 1" to 84".
Cast Iron Flanges from 1" to 84".

Lynchburg Foundry Co.

General Office, Lynchburg, Va.

Peoples Gas Bldg. Chicago, Ill.

50 Church St. New York, N. Y.



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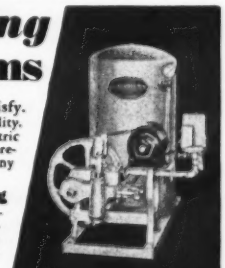
Hoosier Systems both sell and satisfy. Famous for their sturdiness and dependability. Complete line includes wide range of electric or gasoline powered units to meet any requirement. Shallow well or deep well. Many exclusive features at no greater cost.

Write for Catalog

Complete catalog and interesting dealer proposition mailed on request without obligation.



HOOSIER

FLINT & WALLING MFG. CO.
76 OAK STREET, KENDALLVILLE, IND.

TONCAN COPPER MO-LYB-DEN-UM IRON PIPE

The longer lasting iron pipe for use where conditions of service are severe.

Write for book "Pipe for Permanence"

REPUBLIC STEEL CORPORATION

GENERAL OFFICES YOUNGSTOWN, OHIO

Show your customers how the installation of Overton Roof Flashings will often save many times their cost in the decorating they protect to say nothing of the security they provide for years.

Order Overtons from your jobber today

BUTLER MFG. CO. MINNEAPOLIS MINNESOTA

In COLUMBUS it's
THE NEIL HOUSE
"Across from the Capitol"
TOM A SABREY, Manager

655 COMFORTABLE ROOMS
ALL WITH BATH
GARAGE FACILITIES • RATES STARTING AT $2.50

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What a Sleep!

A soft, luxurious bed in a tastefully arranged room high over the Motor City with a crisp cool breeze blowing over from Canada...

Comfort! Luxury! An address of distinction in the very heart of things in Detroit. A dining room of unusual beauty, famous for its unusual food, with electrically cooled and purified air the year 'round.

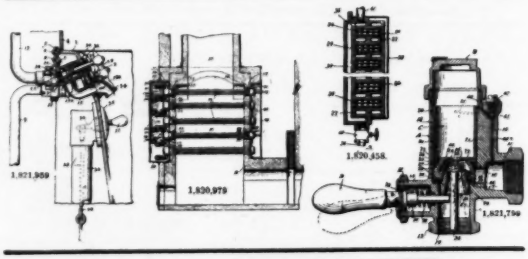
The finest surroundings, the finest service, and the finest address...at ordinary hotel cost... $2.50 and $3.50 .... made possible because
BAKER OPERATED

HOTEL
DETROIT-LELAND
800 OUTSIDE ROOMS WITH BATH
CASS AND BAGLEY AVENUE
DETROIT

Plumbing Department

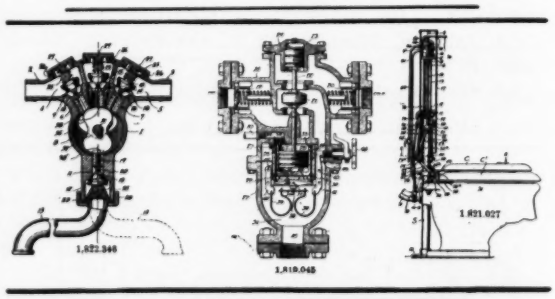
1,821,959. Bathtub. Leon Bloch, Cleveland, Ohio.

1,820,979. Water Heater. Adolph T. Johanson, Chicago, Ill.



1,820,458. Electrical Water Heater. Fredrick Alfred Edward Jenkins, Canterbury, near Sydney, Australia.

1,821,799. Flush Valve. Peter Grabler, Rocky River, and William Grabler, Mansfield, Ohio.

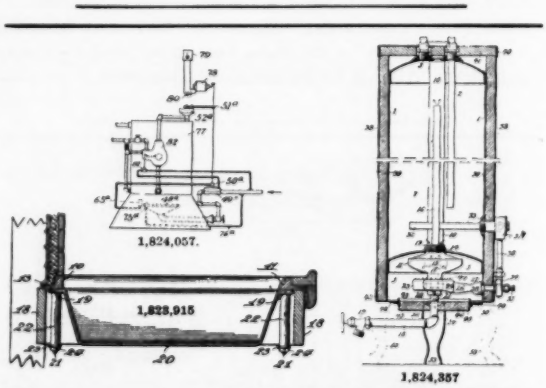


1,822,346. Faucet. Daniel W. Guiles, Seattle, Wash.

1,819,045. Thermostatic Water Mixer. Morton O. Snediker, Chicago, Ill., assignor to Powers Regulator Company, Chicago, Ill., a corporation of Illinois.

1,821,027. Seat and Seat Cover Actuating Mechanism for Toilets. John A. Oya, Honolulu, Territory of Hawaii.

1,824,057. Diaphragm Valve and Method of Operating the Same. Frederick W. Robertshaw, Pittsburgh, and George A. Robertshaw, Greensburg, Pa.

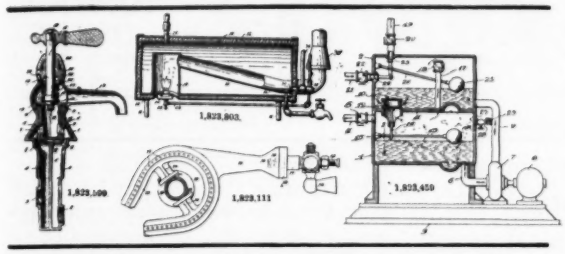


1,823,915. Sink Supporting Frame. Walter John Reeves, Glendale, Calif.

1,824,357. Gas Water Heater. Victor Mauck, Merion, Pa.

1,823,599. Single Control Combination Hot and Cold Water Supply Faucet. Mooshy George, Chicago, Ill.

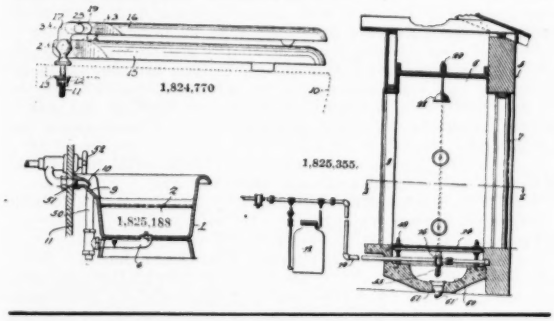
1,823,803. Water Heater. Cyrus A. Leland, Jr., Des Moines, Iowa.



1,823,111. Gas Burner. Victor Mauck, Merion, Pa.

1,823,459. Fluid Displacement Pump. Edward F. McCarthy, Chicago, Ill., assignor to Chicago Pump Company, Chicago, Ill., a Corporation of Illinois.

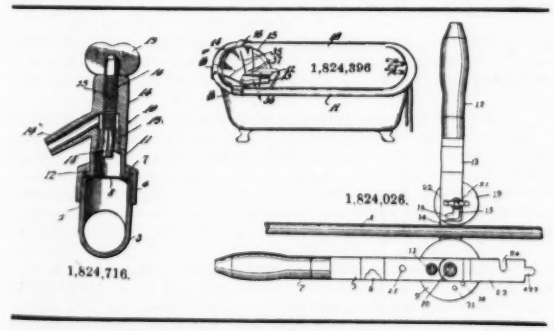
1,824,770. Closet Seat Hinge. Frank G. Brotz, Kohler, Wis., assignor to Kohler Company, Kohler, Wis., a Corporation of Wisconsin.



1,825,188. Bathtub. Pauline Jarmusz, Gary, Ind.

1,825,355. Shower Bath. John J. Keefe, San Antonio, Tex.

1,824,716. Control Valve Attachment for Flush Tank Faucets. Patrick C. Gibbons, Edina, Mo.



1,824,396. Bathtub Seat. John W. Erhard and Antoinette Erhard, New York, N. Y.

1,824,026. Tube and Pipe Bender. Bert R. Little, Bellingham, Wash.

1,825,326. Water Heater. James P. Morley, Michigan City, Ind., assignor to Bastian-Morley Company, La Porte, Ind., a Corporation of Indiana.

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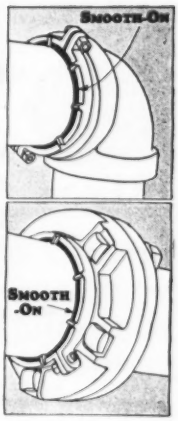

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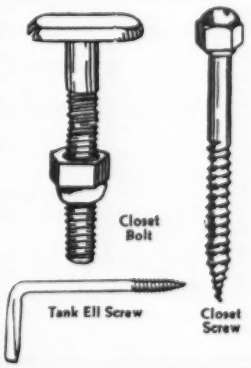

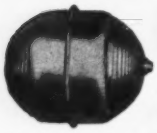

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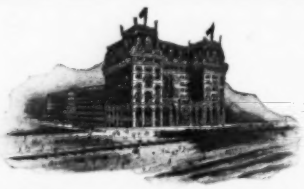

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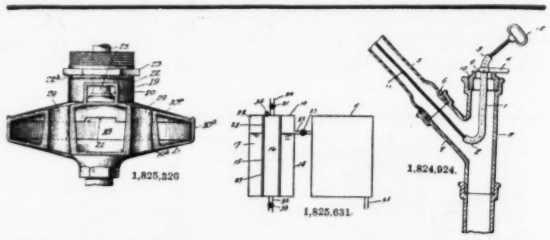

1,825,631. Water Softening. Anthony G. Horvath, Dayton, Ohio, assignor, by mesne assignments, to Uniflow Manufacturing Company, Erie, Pa., a Corporation of Pennsylvania.

1,824,924. Guide for Pipe Cleaning Rods. Edwin Paul and John Mantonya, Albuquerque, N. Mex.

◆

Statement of Ownership and Management of "Domestic Engineering" for October 1, 1931

The following is a statement of ownership, management, etc., as required by the Act of Congress of August 24, 1912, of "Domestic Engineering," published bi-weekly at Chicago, Illinois, for October 1, 1931.

State of Illinois, County of Cook, ss.: Before me, a Notary Public in and for the state and county aforesaid, personally appeared D. J. Hansen, who, having been duly sworn according to law, deposes and says that he is the manager of "Domestic Engineering," and that the following is, to the best of his knowledge and belief, a true statement of the ownership and management of the aforesaid publication, for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 411, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

Publisher, Engineering Publications, Inc., Chicago, Illinois.
Editor, F. P. Keeney, Chicago, Illinois.
Managing Editor, R. V. Sawhill, Chicago, Illinois.
Business Manager, D. J. Hansen, Chicago, Illinois.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

Engineering Publications, Inc., 1900 Prairie Avenue, Chicago, Illinois. Stockholders: F. P. Keeney, Chicago; O. T. Carson, Chicago; E. D. Winslow, New York City, N. Y.; R. Herlov, Chicago; C. L. Davis, Chicago; E. G. Hutchison, Chicago; R. Payne Wettstein, Pittsburgh, Pa.; W. J. Osborn, Fairfield, Conn.; D. M. Kenney, Chicago; D. J. Hansen, Chicago.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stocks, bonds, or other securities than as so stated by him.

D. J. HANSEN,
Manager.

Sworn to and subscribed before me this 26th day of September, 1931.

L. M. DIXON,
Notary Public.

[My commission expires September 14, 1934.]
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